

Revision History

Ver. A Initial Release
 Ver. B R397 75ohm---->750ohm
 modify SDI upstream circuit
 delete the remark of SW5
 R234,R235----->NC
 delete U45
 update the I2C address of AIC31
 R15 10kohm---->4.7kohm
 R75 10kohm---->4.7kohm
 R327 2.49k ohm---->1.47k ohm
 RSET 1.5847k ohm---->1.105k ohm
 R144 NC---->0 ohm
 C109,C141 100pF---->NC
 The symbol of SIL9022(U24) add a E-PAD pin that should be connected to GND
 Update the connection of ETH transformer center tap

HI3516DMEB VER.B

The Demo Board for HI3516

Provide by Hisilicon

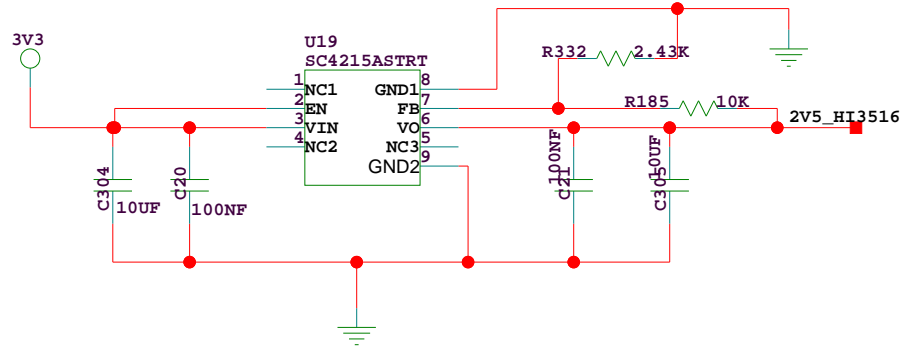
PAGE 3-4	POWER
PAGE 5	Unit 1 of Hi3516(POWER)
PAGE 6	Unit 2 of Hi3516(GND)
PAGE 7	Unit 3 of Hi3516(DDRC)
PAGE 8	DDR3
PAGE 9	Unit 4 of HI3516(SYS)
PAGE 10	Unit 5 of HI3516(VIVO)
PAGE 11	Unit 6 of HI3516(Peripherals)
PAGE 12	ETH
PAGE 13	PCIE
PAGE 14	UART & IR
PAGE 15	SDIO
PAGE 16	PWM
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PAGE 21	Audio Codec Output
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PAGE 27	NAND & SPI NOR FLASH
PAGE 28-30	CPLD

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 1 OF 30	
		B	03030001	HUAWEI TECH CO.,LTD.	

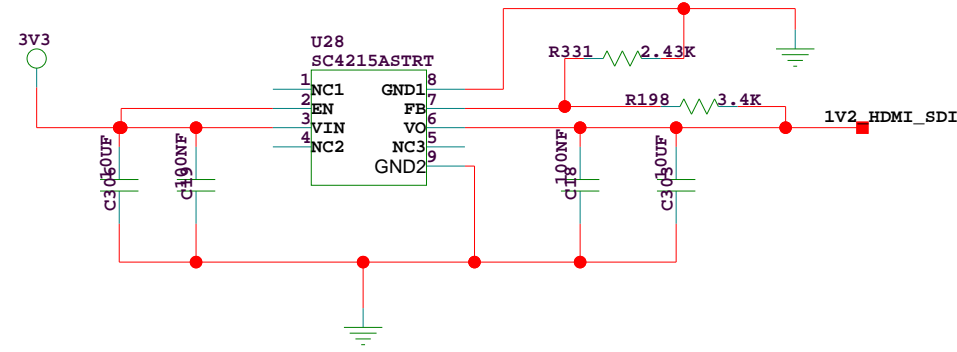
Power

LDO1 3.3V_2.5V 2A



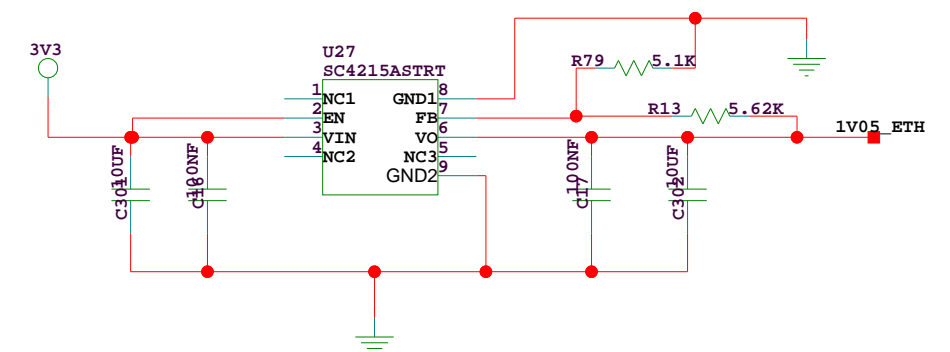
$$V_{out} = 0.5(R1+R2)/R2 = 0.5 * (10 + 2.43) / 2.43 = 2.5576V$$

LDO2 3.3V_1.2V 2A



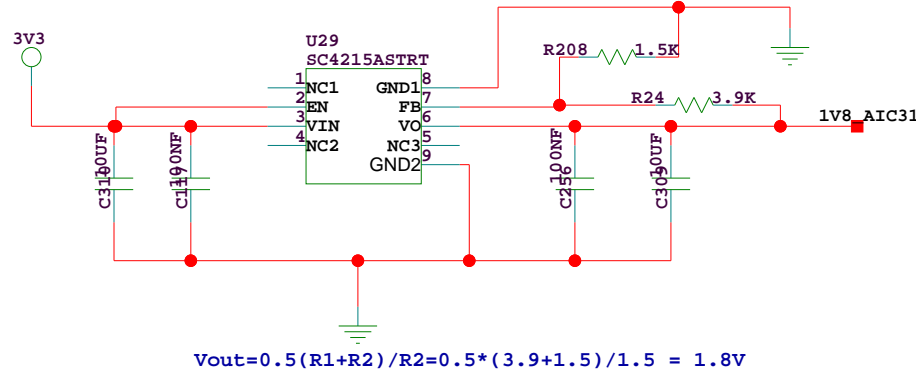
$$V_{out} = 0.5(R1+R2)/R2 = 0.5 * (3.4 + 2.43) / 2.43 = 1.199V$$

LDO4 3.3V_1.05V 2A

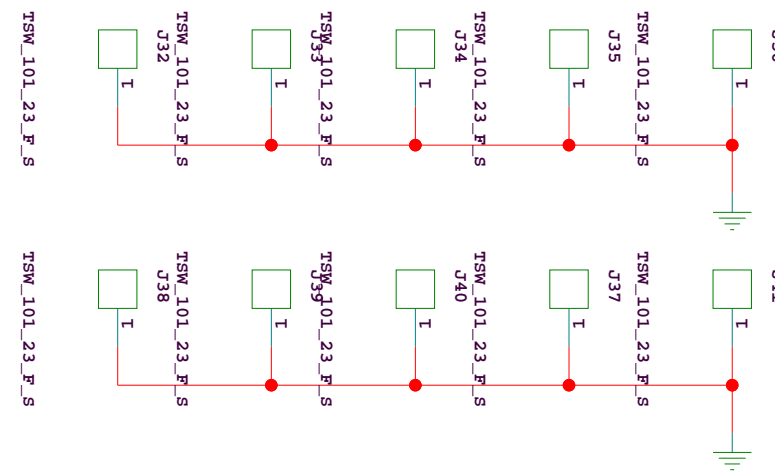


$$V_{out} = 0.5(R1+R2)/R2 = 0.5 * (5.62 + 5.1) / 5.1 = 1.05V$$

LDO3 3.3V_1.8V 2A



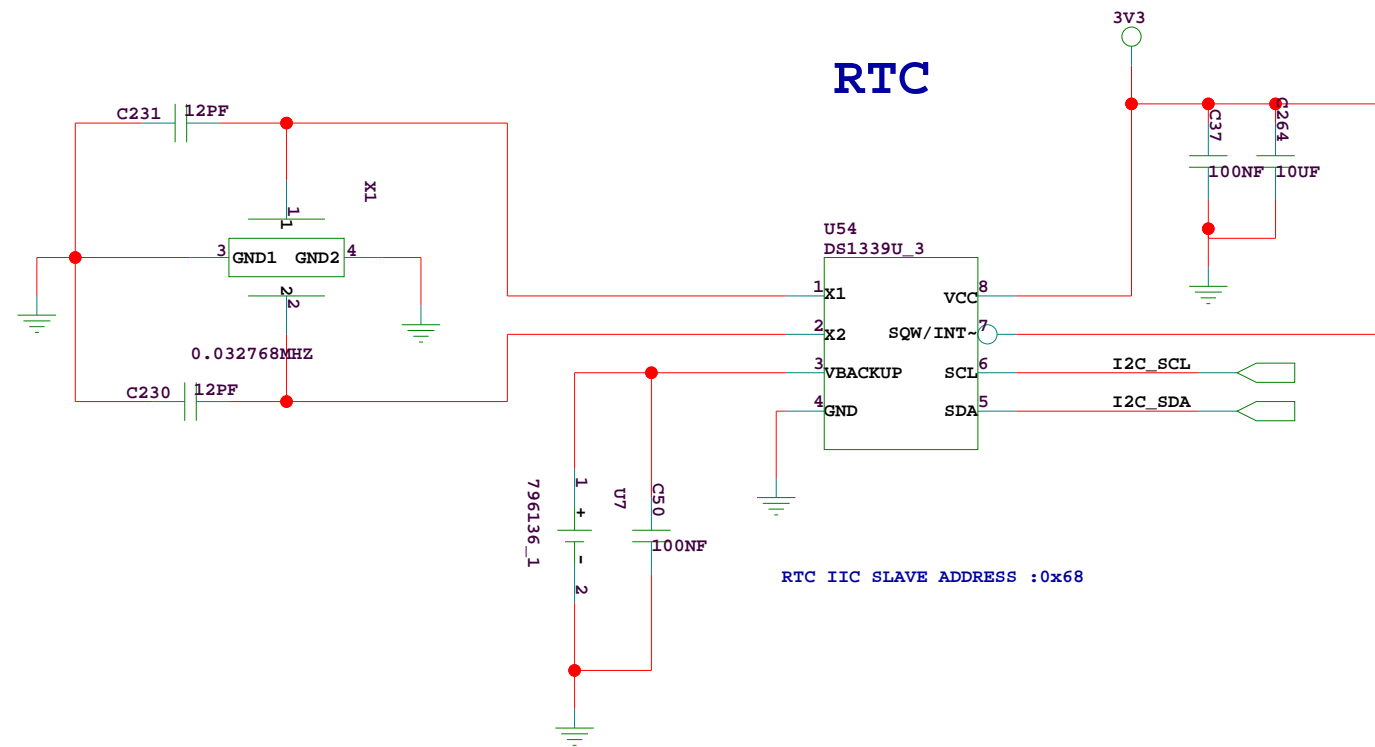
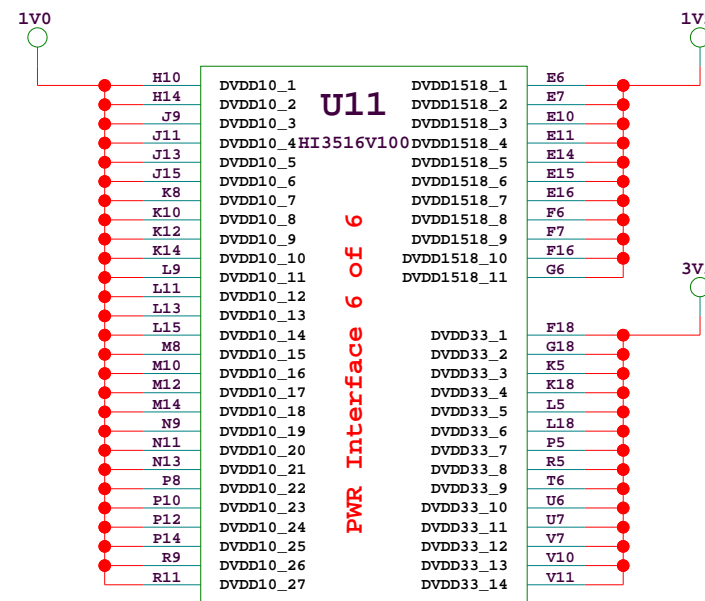
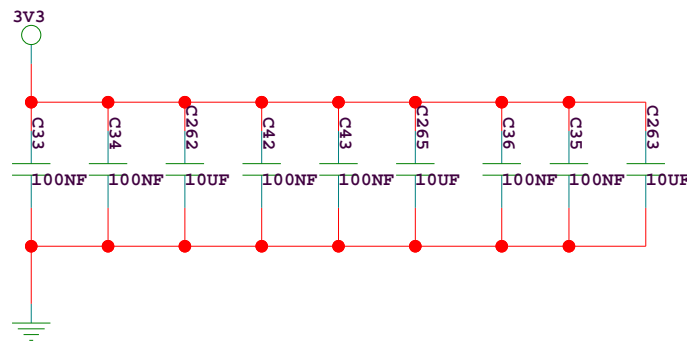
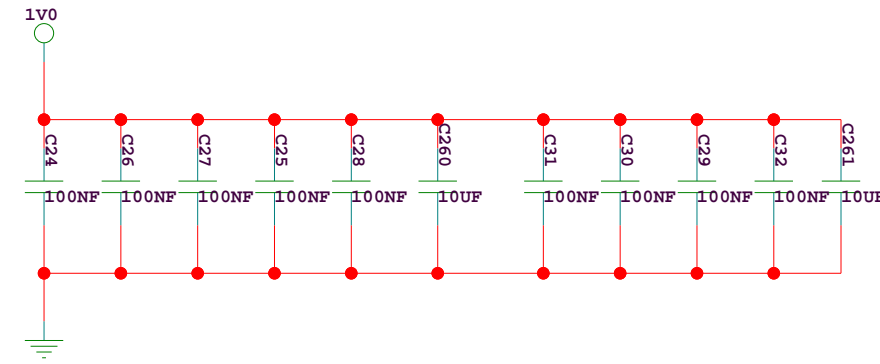
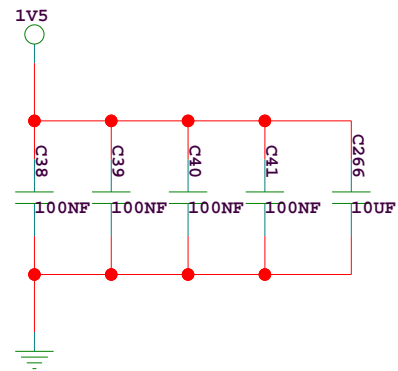
$$V_{out} = 0.5(R1+R2)/R2 = 0.5 * (3.9 + 1.5) / 1.5 = 1.8V$$



The type and specification of the components refer to the BOM

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				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 4 OF 30	
		B	03030001	HUAWEI TECH CO.,LTD.	

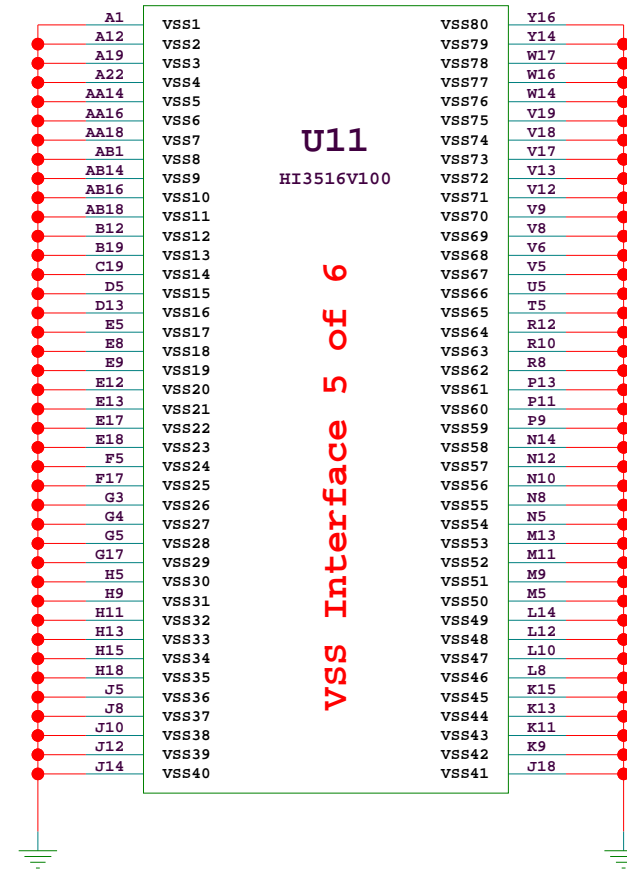
Unit 1 of HI3516 (Power)



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 5 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	

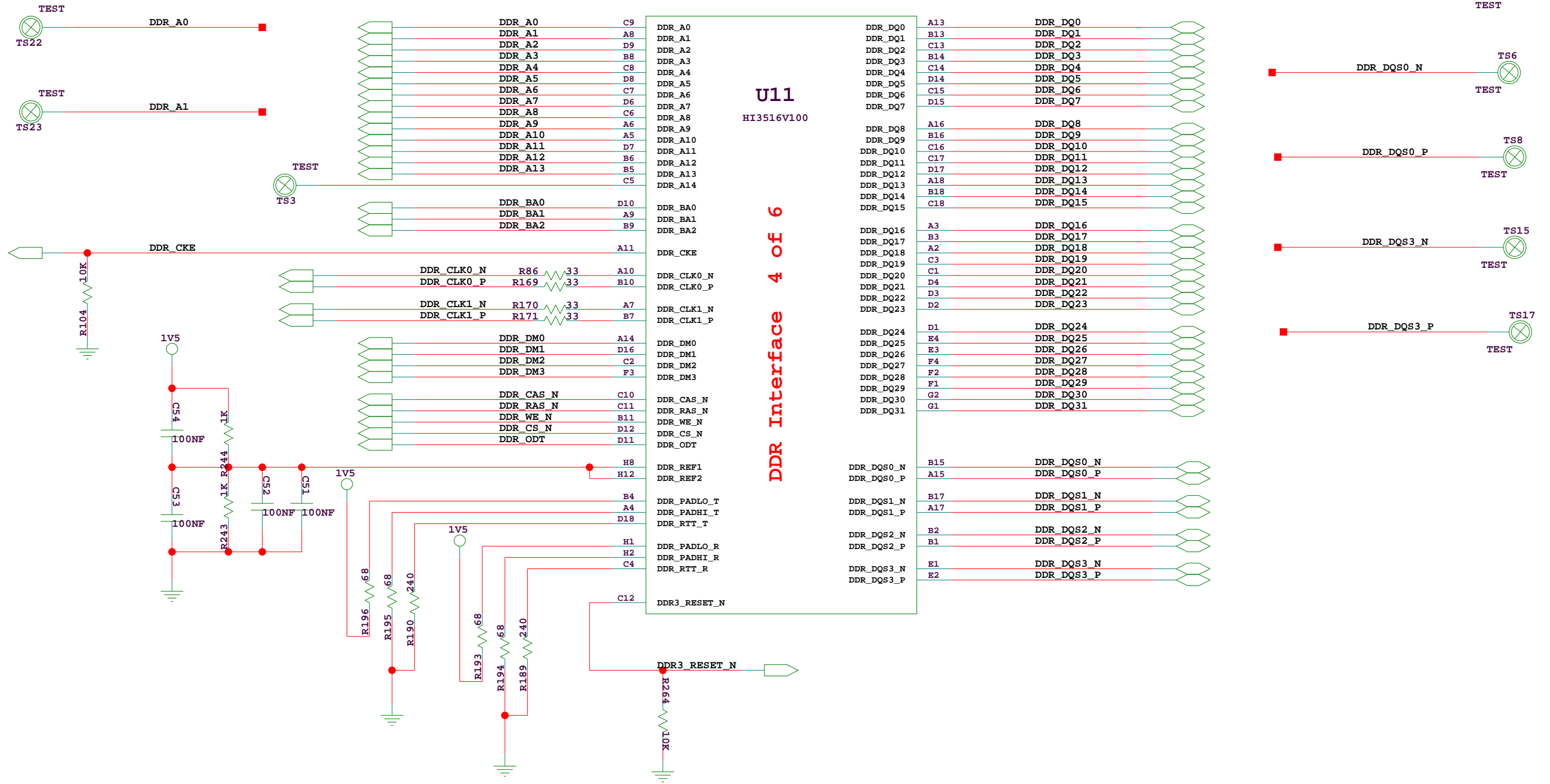
Unit 2 of HI3516 (GND)



The type and specification of the components refer to the BOM

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				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 6 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	

Unit 3 of HI3516 (DDRC)



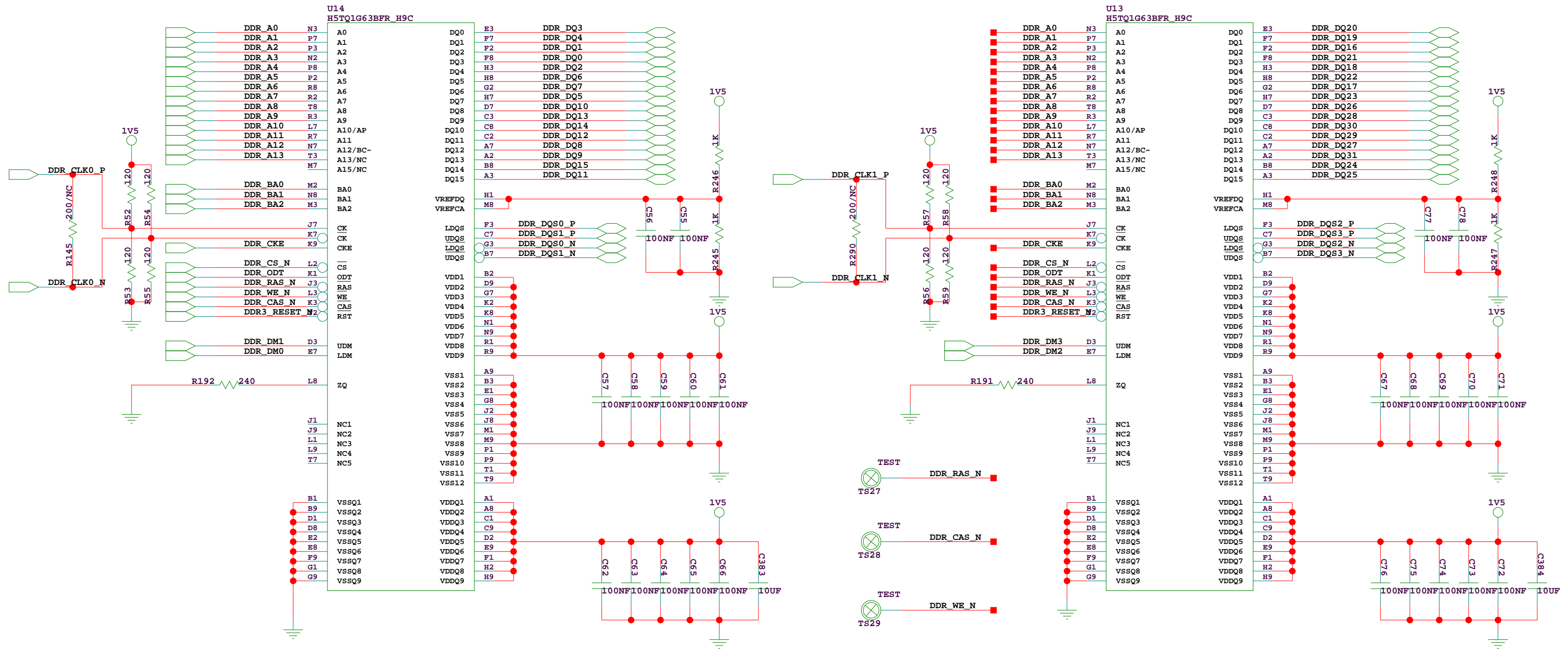
DDR2/3:PADHI pull down resistance 68ohm
 DDR2/3:PADLO pull up resistance 68ohm

DDR2:RTT pull down resistance 300ohm
 DDR3:RTT pull down resistance 240ohm

The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	A3TITLEBLOCK		NA	
REVIEWED	LISI XXXXX			ECA NO	DATE
		VER	PART_NUMBER	00001234	
		B	03030001	SHEET 1 OF 1	
				HUAWEI TECH CO.,LTD.	

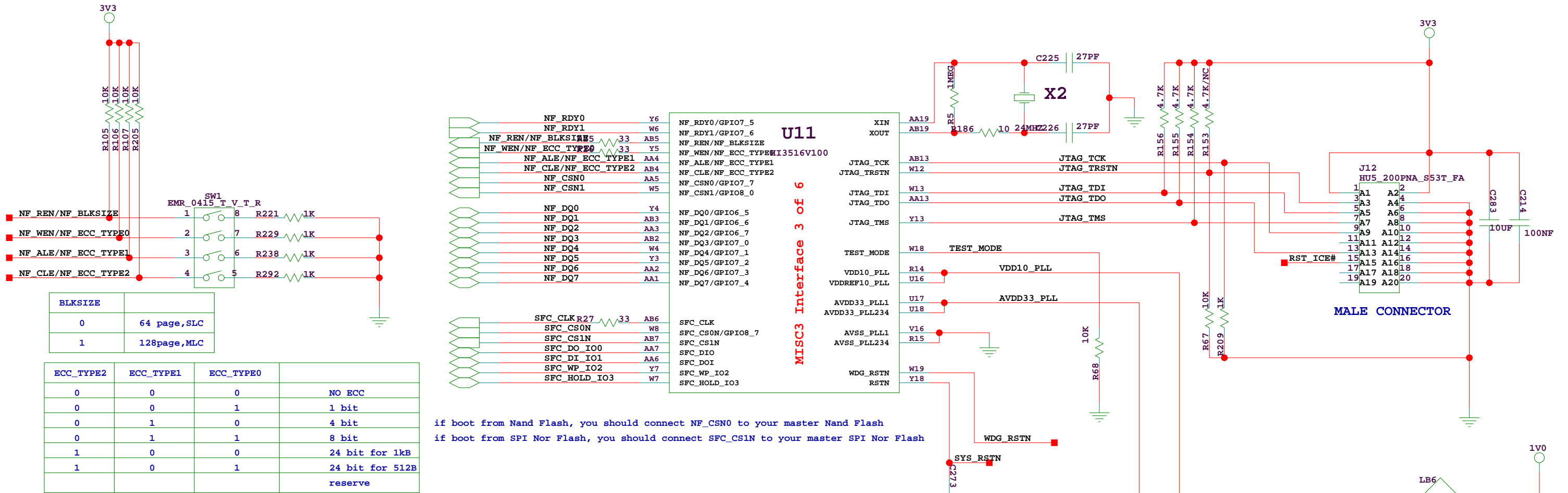
DDR3 of DDR A & B



The type and specification of the components refer to the BOM

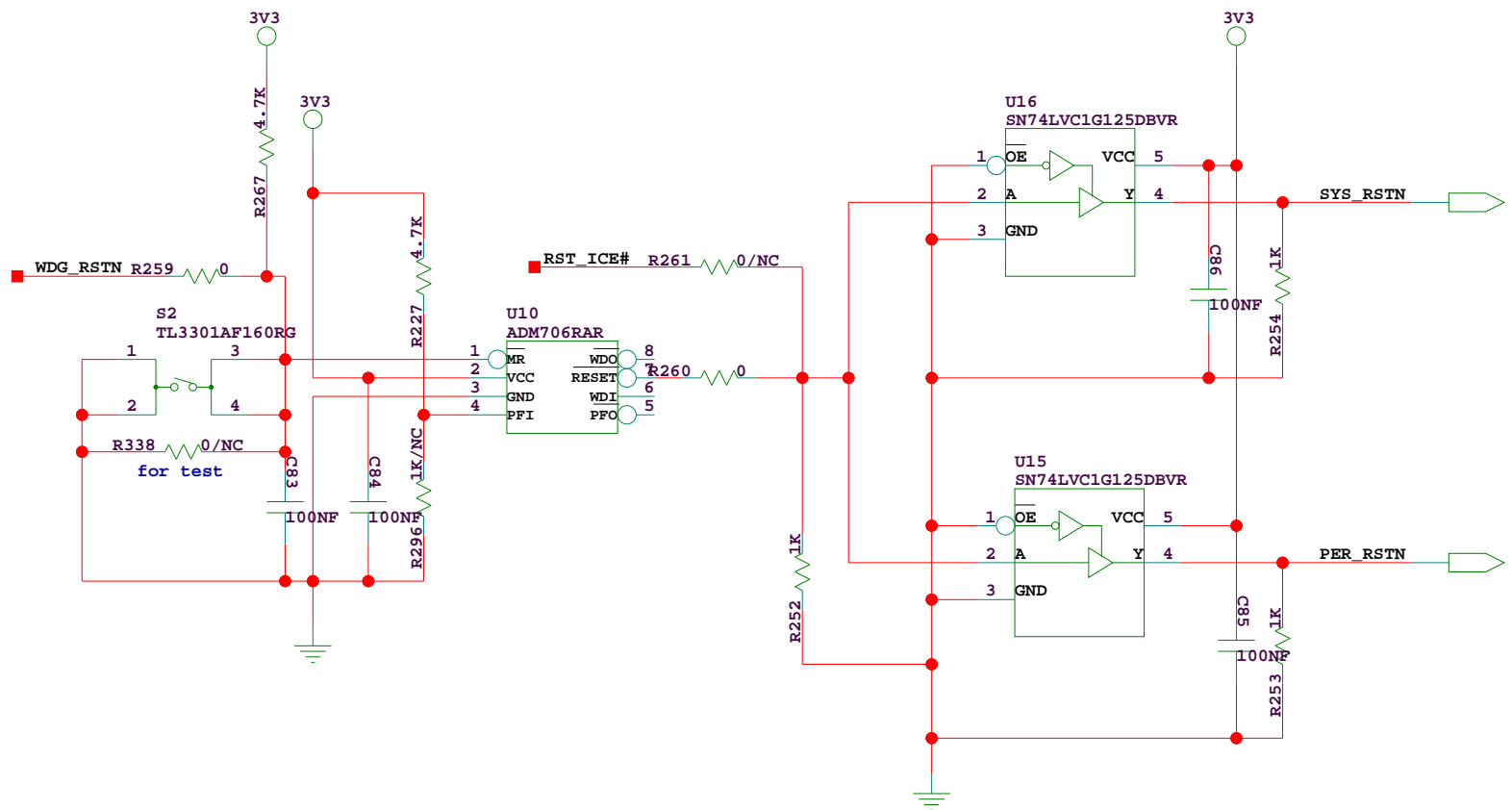
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REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 8 OF 30
		B	03030001	HUAWEI TECH CO.,LTD.

Unit 4 of HI3516 (Clock & JTAG & PLL & Reset & NF & SFC)



if boot from Nand Flash, you should connect NF_CSNO to your master Nand Flash
 if boot from SPI Nor Flash, you should connect SFC_CS1N to your master SPI Nor Flash

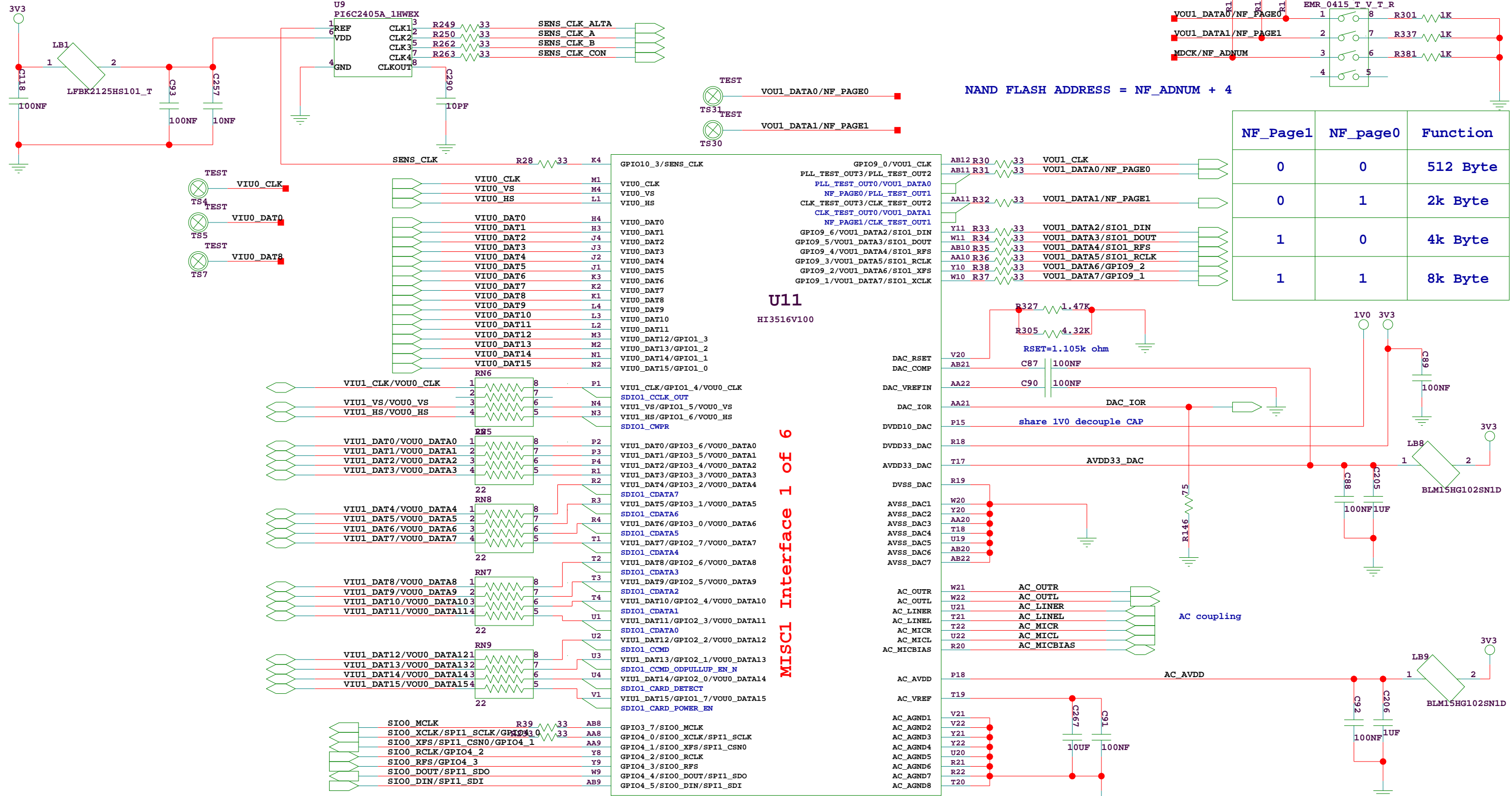
Reset



The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	HI3516DMEB	00001234
REVIEWED	LISI XXXXX	VER B	PART_NUMBER 03030001
		SHEET 9 OF 30	HUAWEI TECH CO.,LTD.

Unit 5 of HI3516 (VI & VO & SIO & AC & DAC)



NF_Page1	NF_page0	Function
0	0	512 Byte
0	1	2k Byte
1	0	4k Byte
1	1	8k Byte

MISCL Interface 1 of 6

The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	HI3516DMEB	00001234
REVIEWED	LISI XXXXX	VER B	PART_NUMBER 03030001
		SHEET 10 OF 30	
		HUAWEI TECH CO.,LTD.	

A

A

B

B

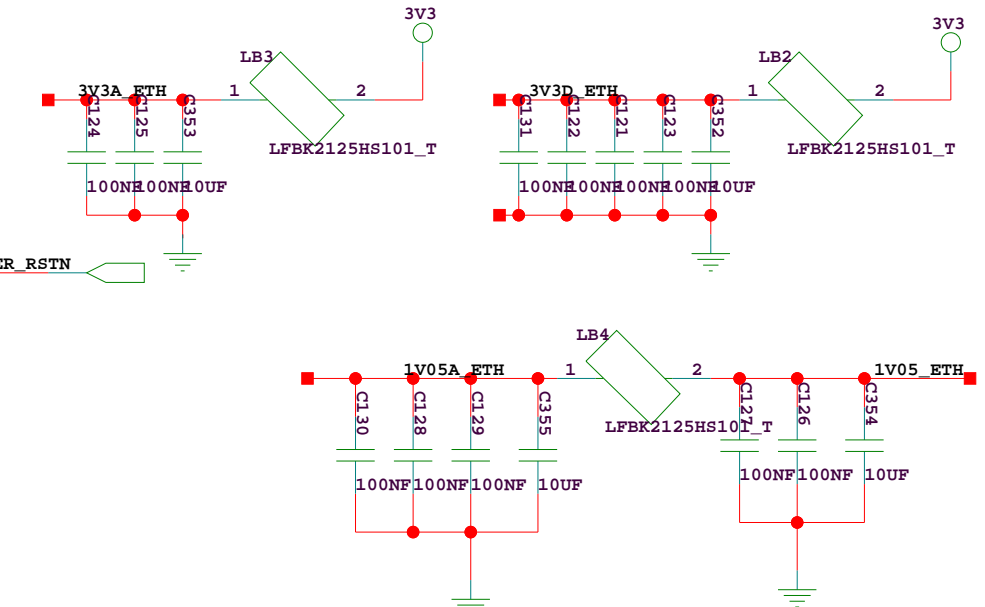
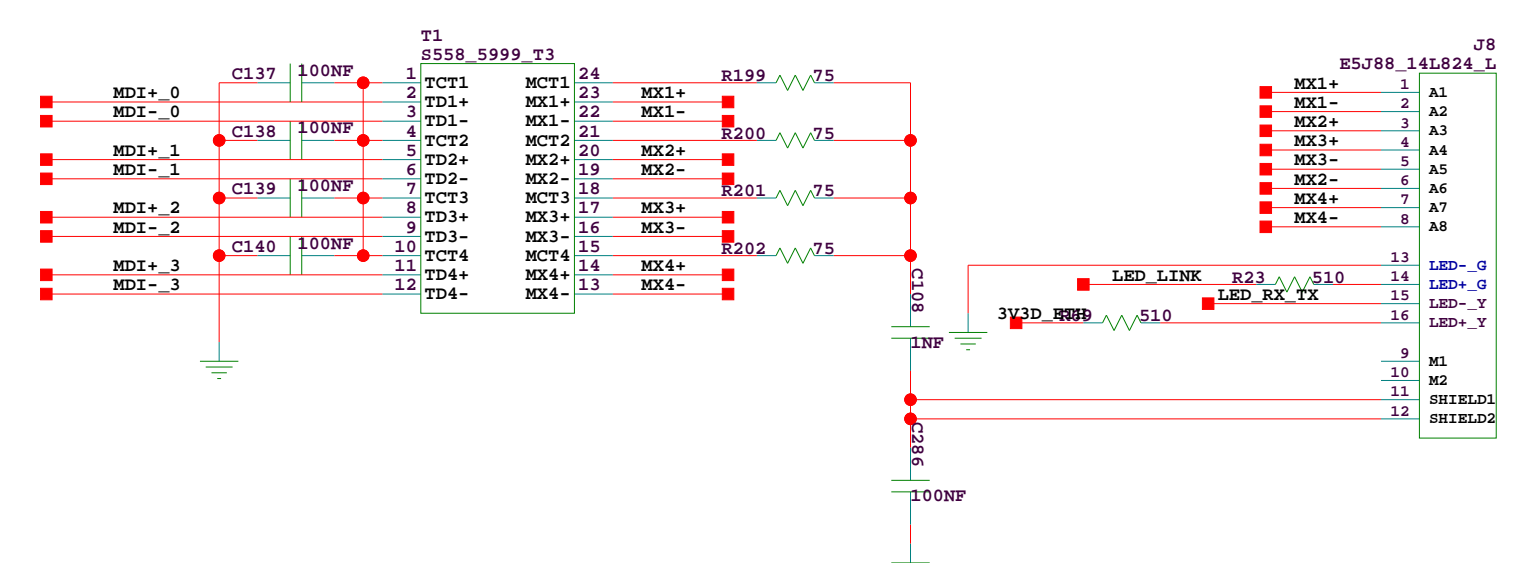
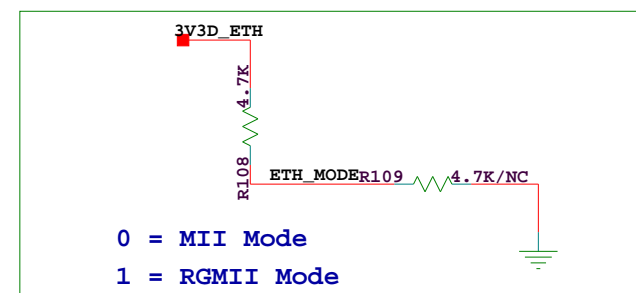
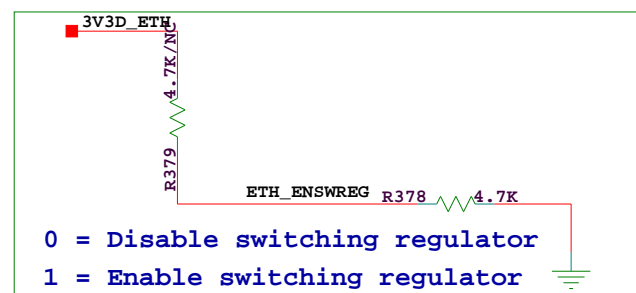
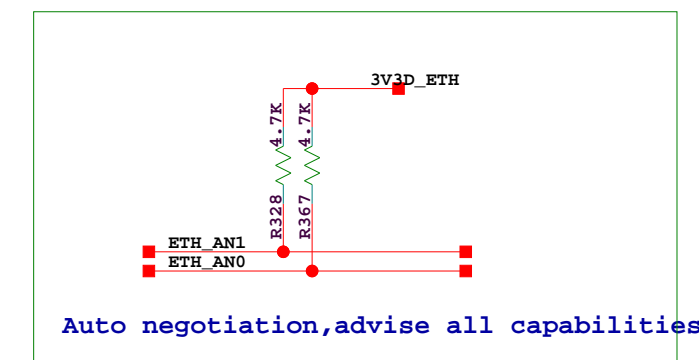
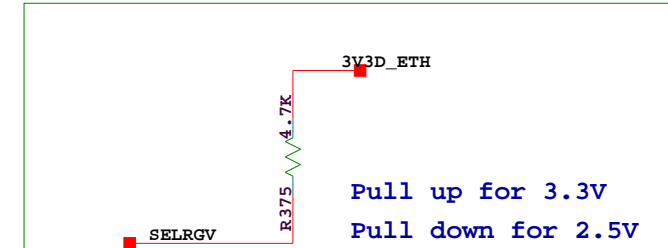
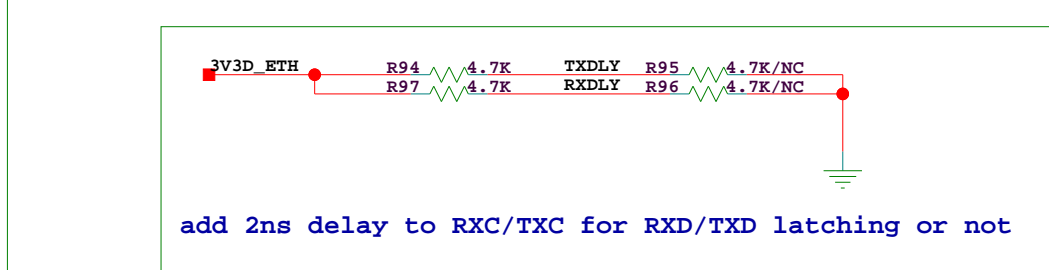
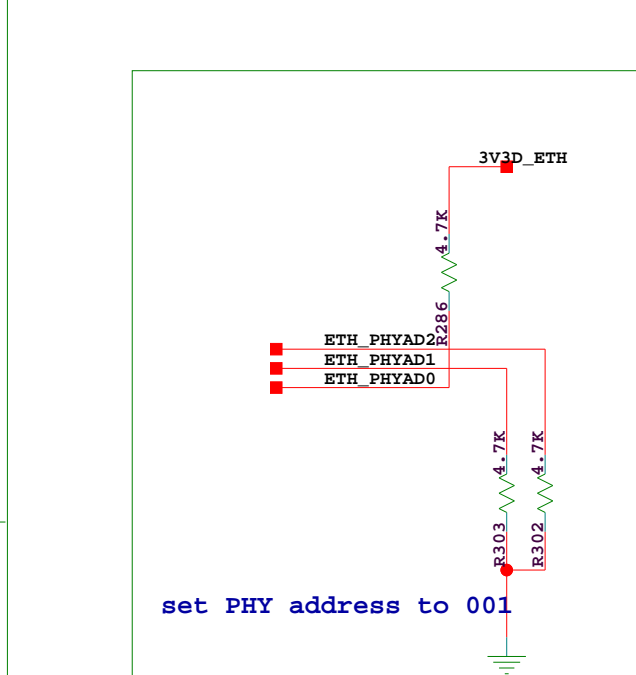
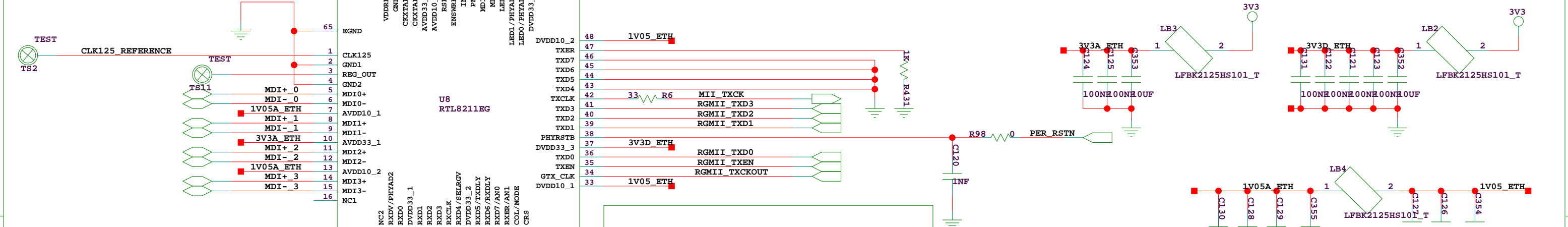
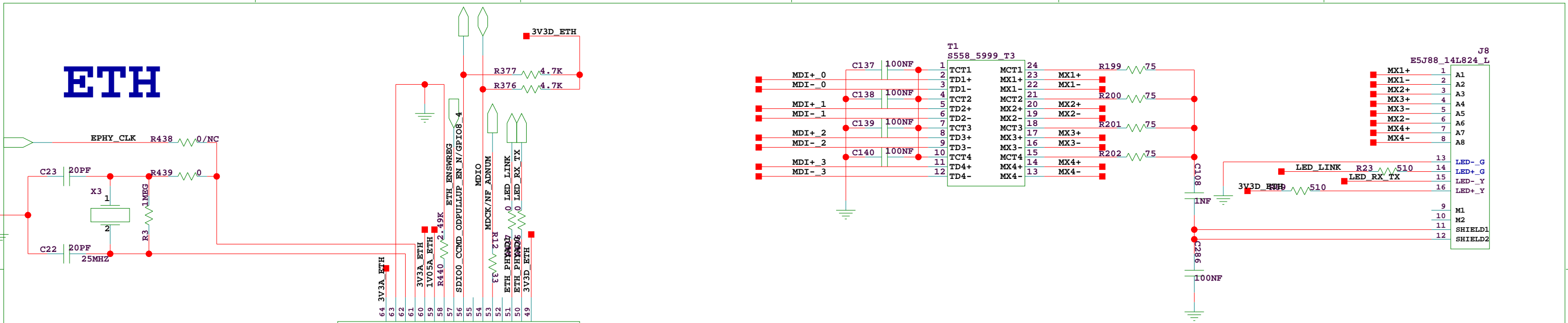
C

C

D

D

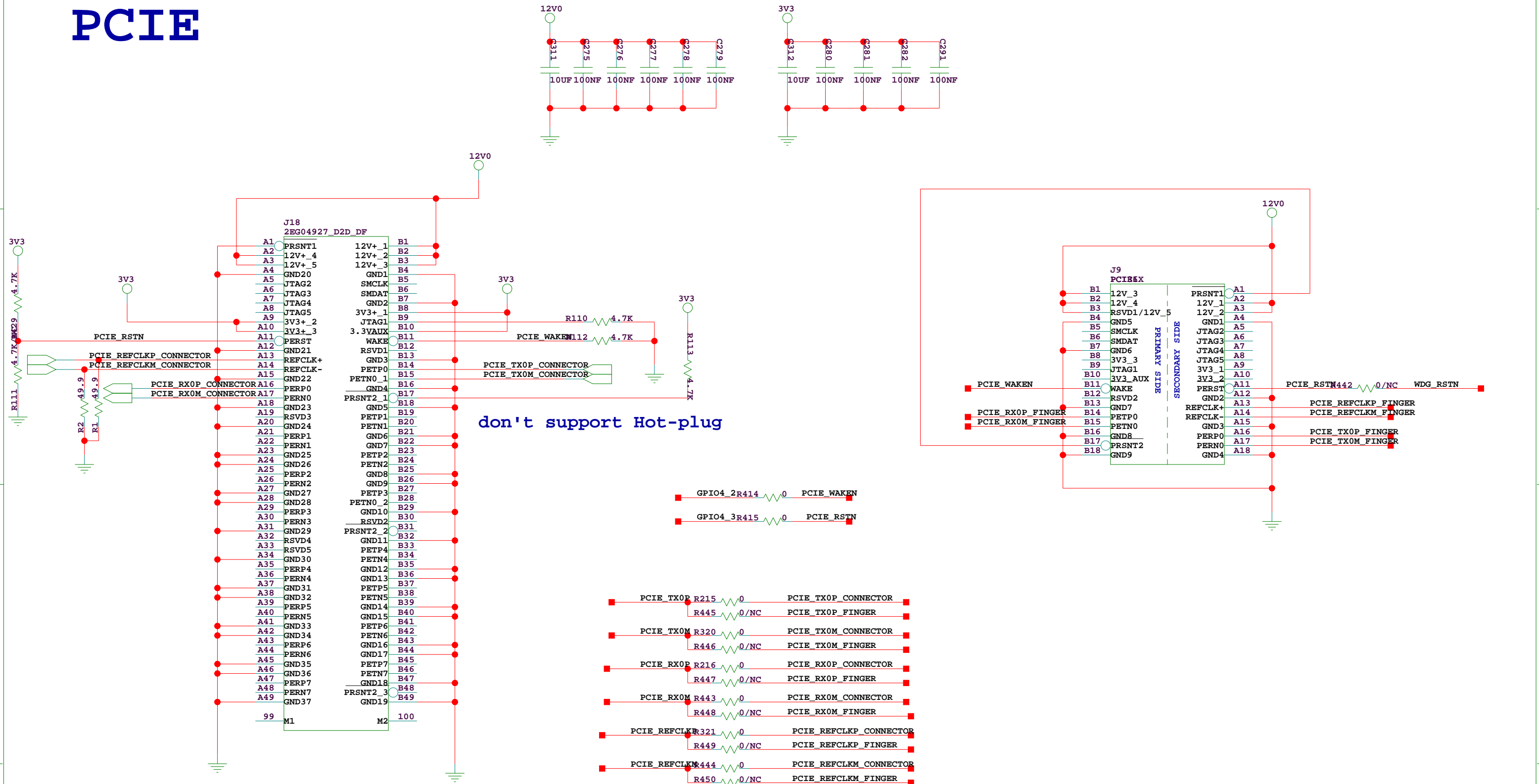
ETH



The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	HI3516DMEB	00001234
REVIEWED	LISI XXXXX	VER B	PART_NUMBER 03030001
		SHEET 12 OF 30	
		HUAWEI TECH CO.,LTD.	

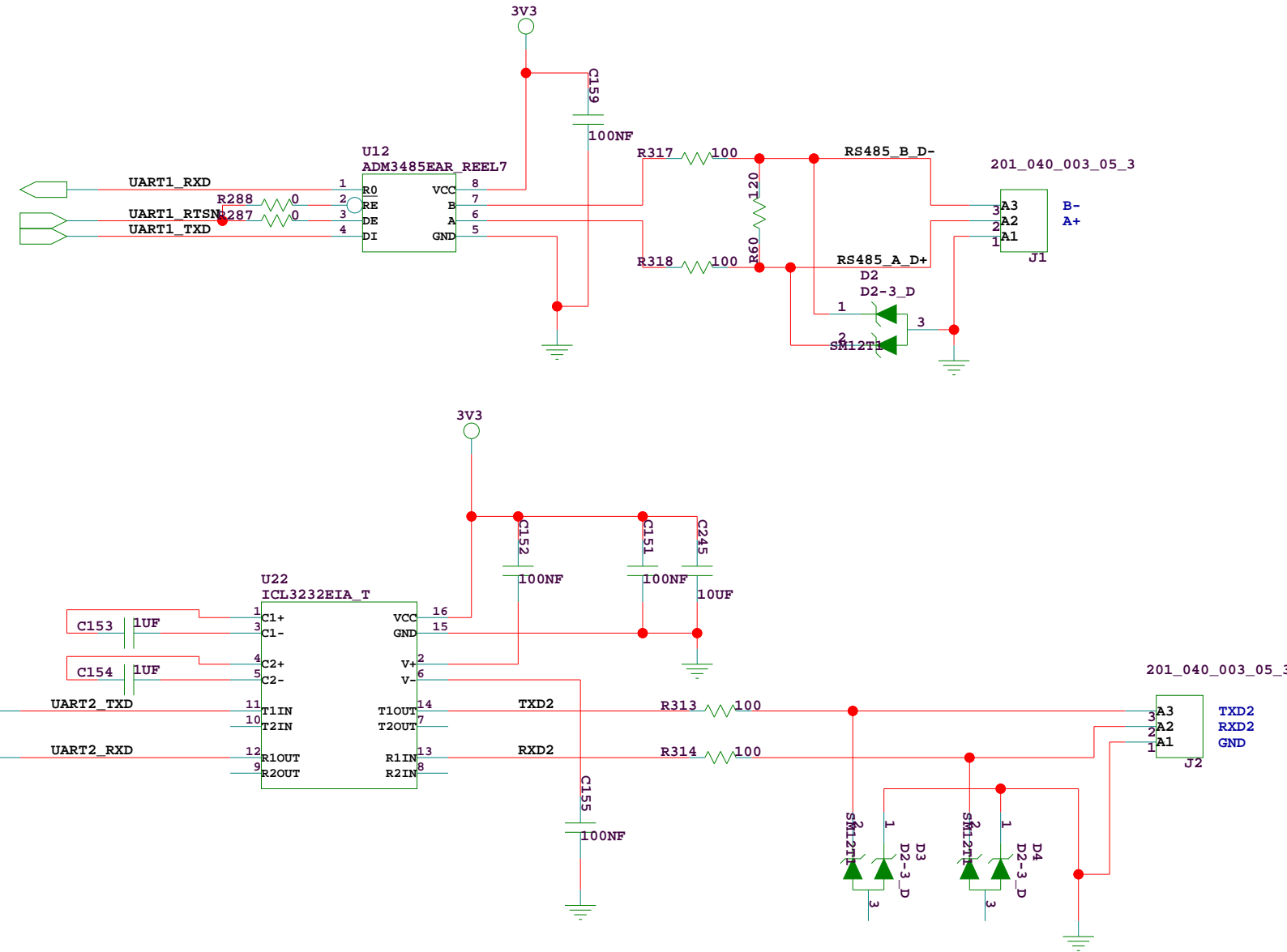
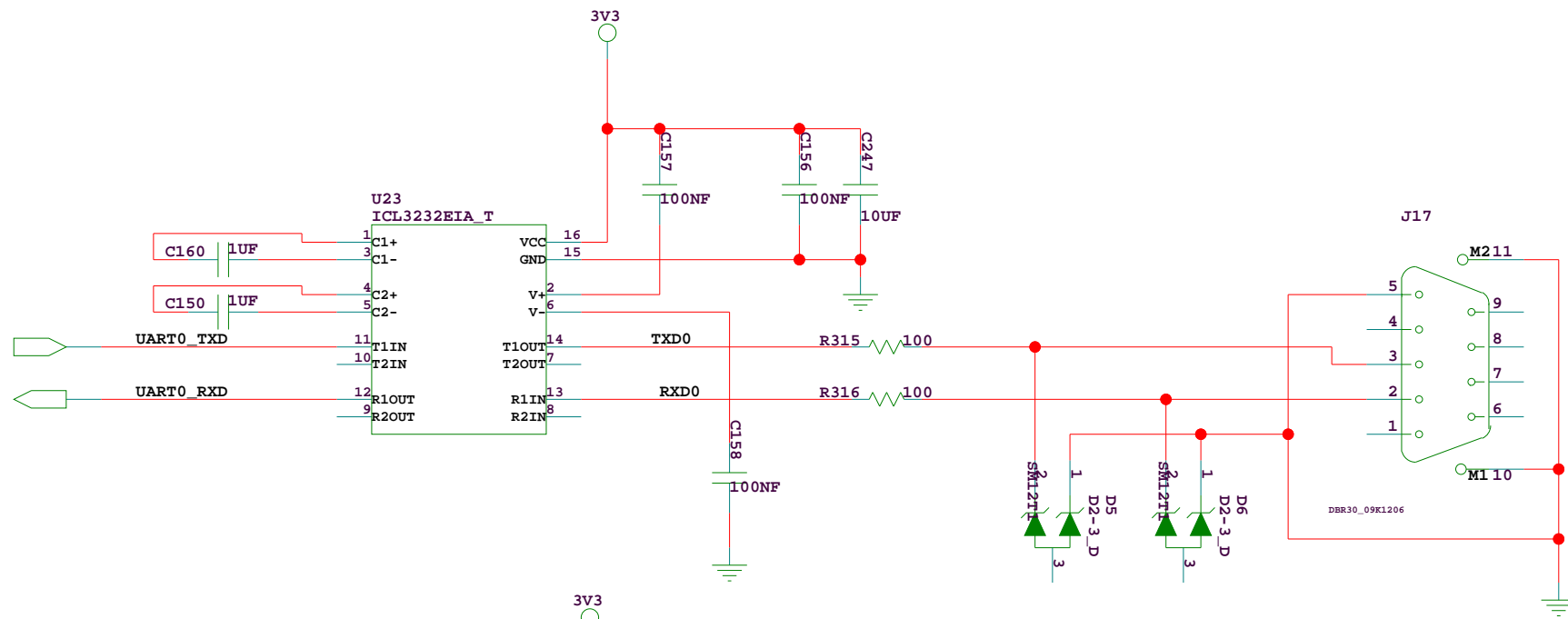
PCIE



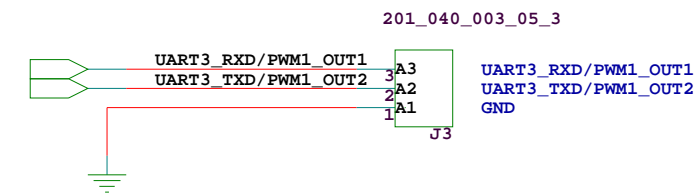
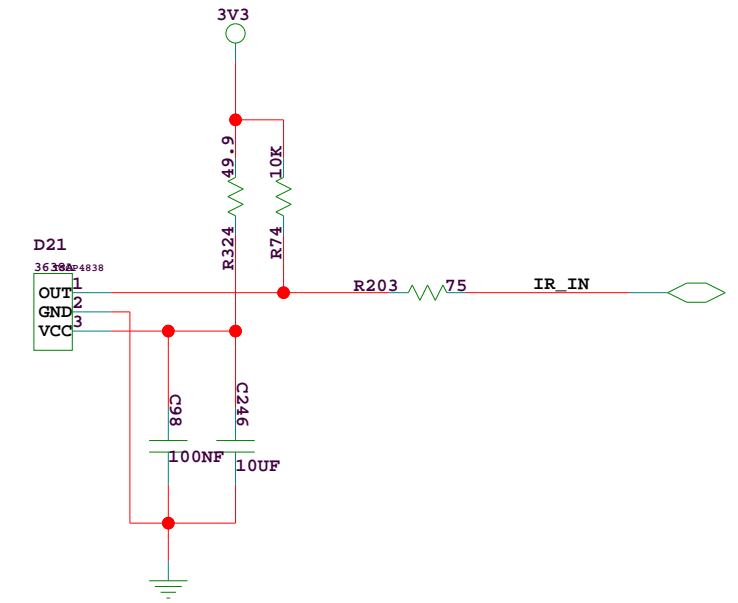
The type and specification of the components refer to the BOM

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REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 13 OF 30	
		B	03030001	HUAWEI TECH CO.,LTD.	

Uart & IR



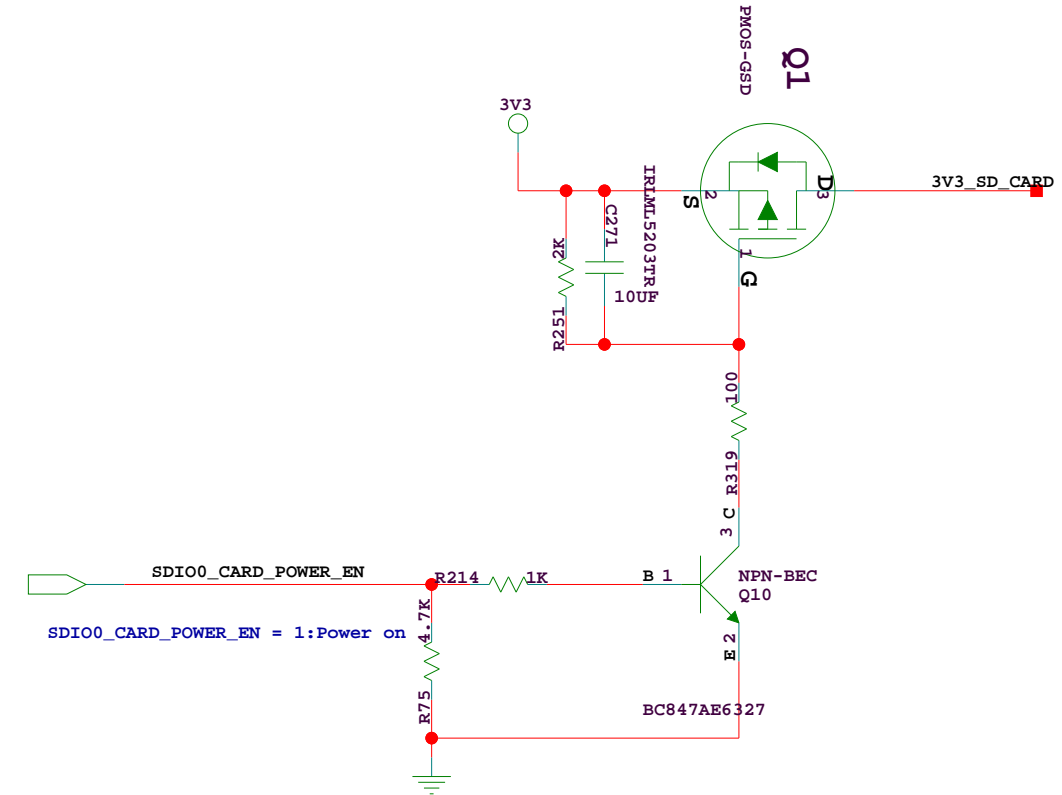
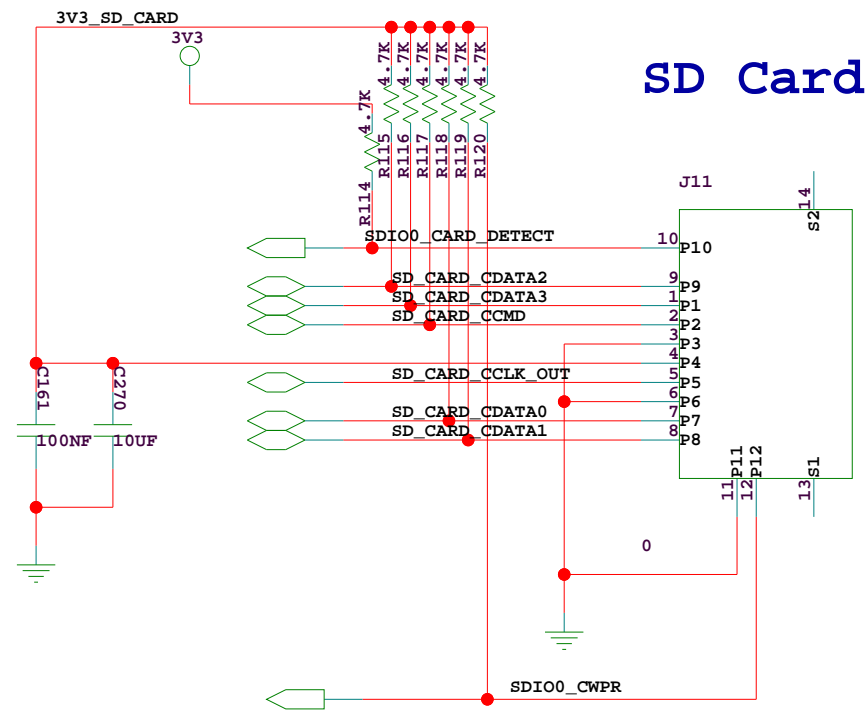
IR



The type and specification of the components refer to the BOM

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		B	03030001	HUAWAI TECH CO.,LTD.	

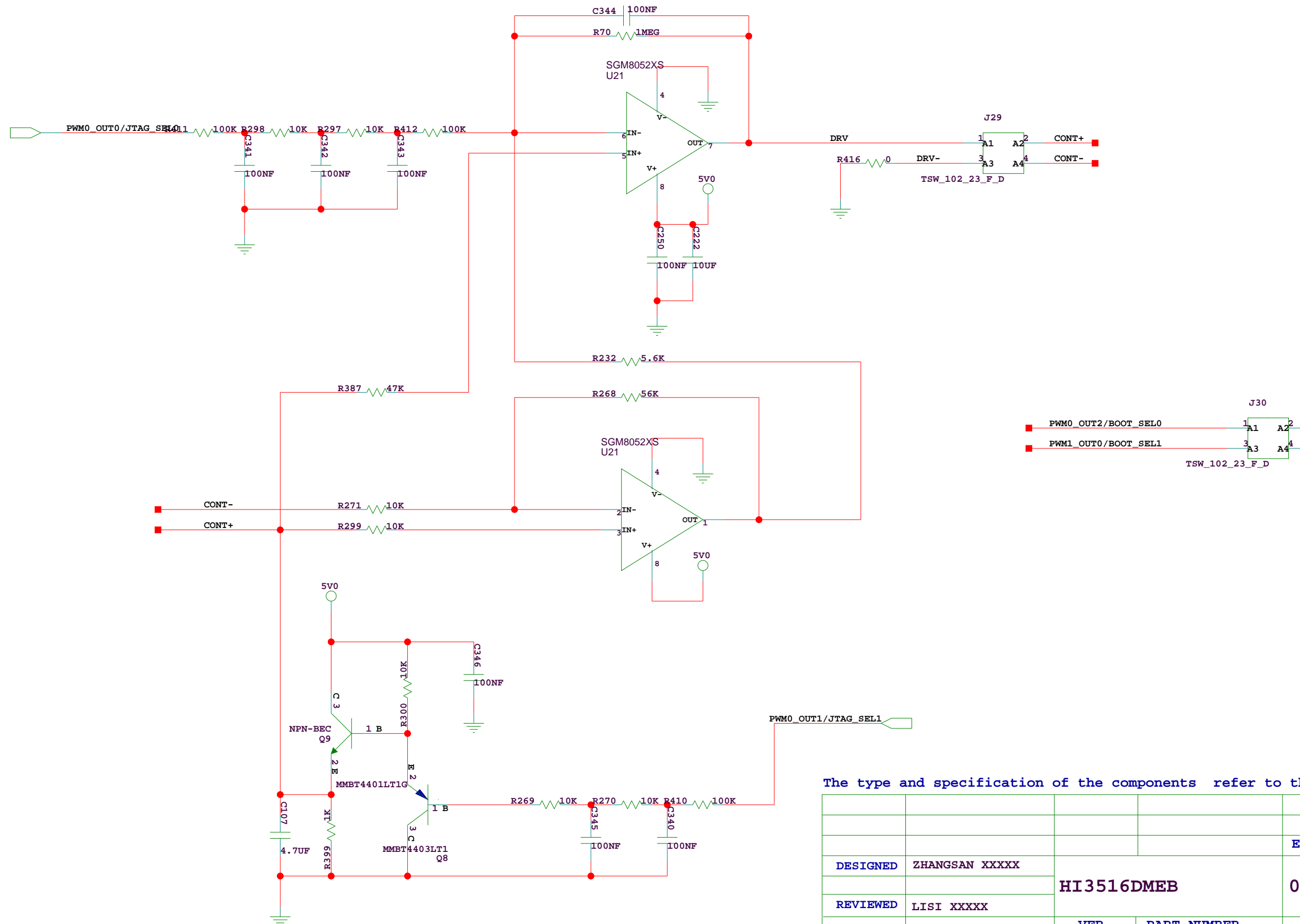
SDIO



The type and specification of the components refer to the BOM

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REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 15 OF 30	
		B	03030001	HUAWEI TECH CO.,LTD.	

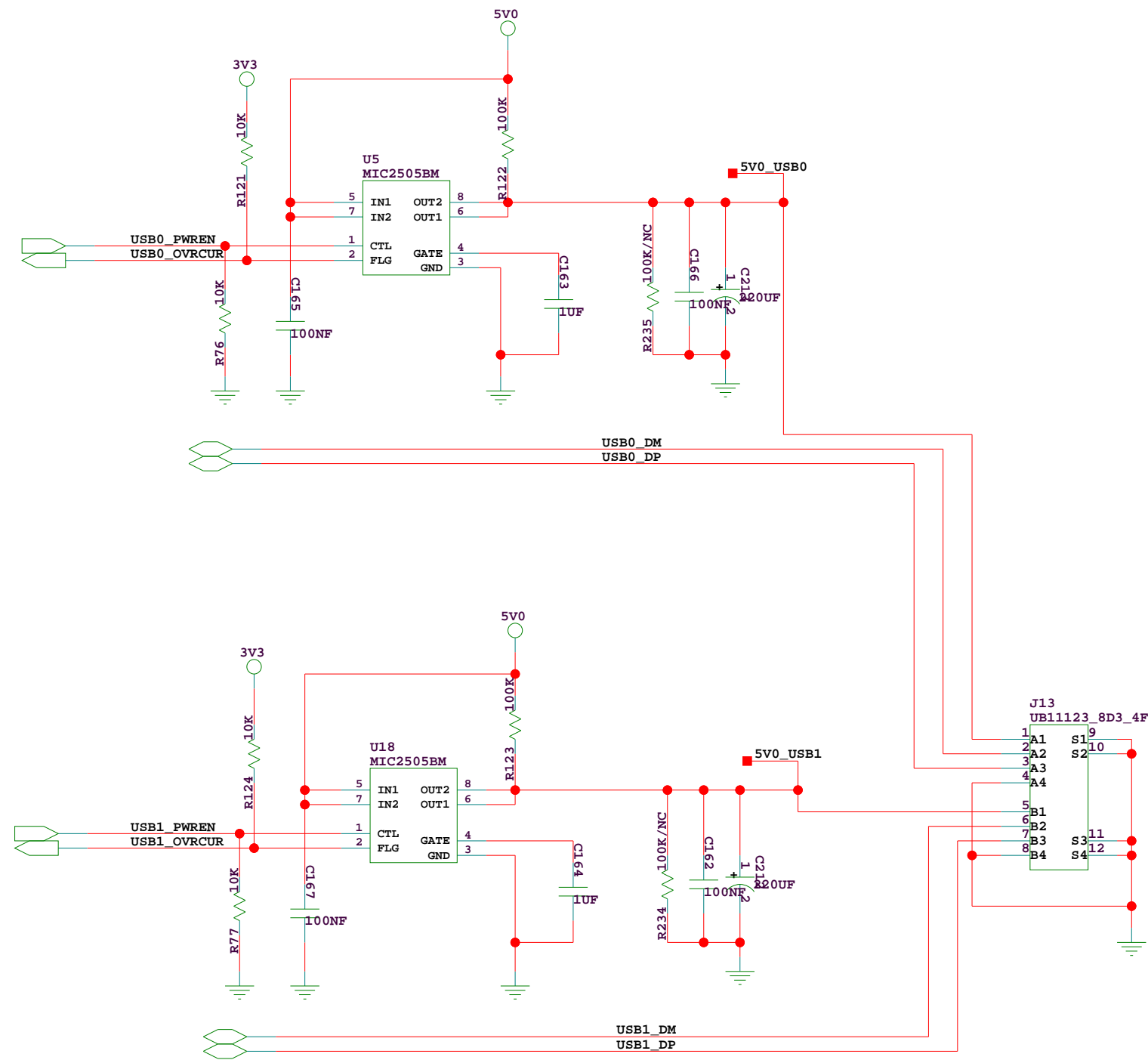
PWM



The type and specification of the components refer to the BOM

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DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 16 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	

USB



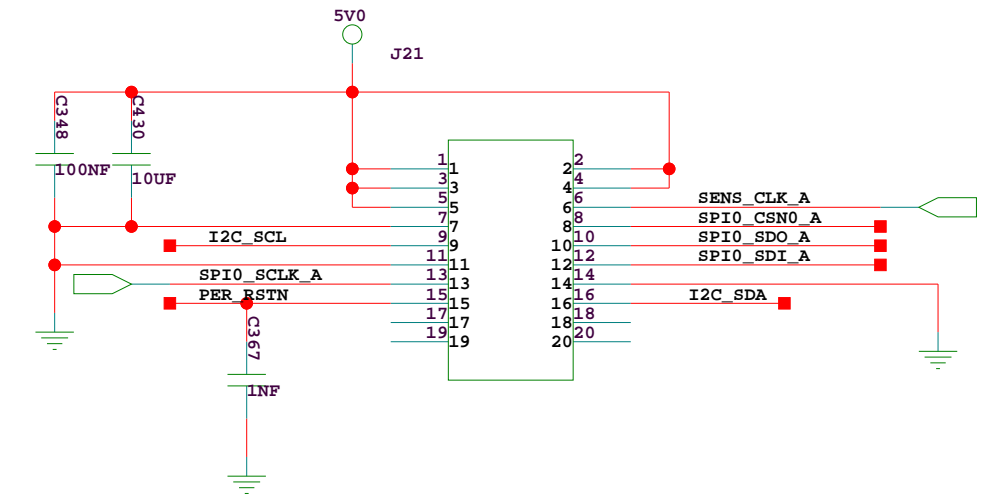
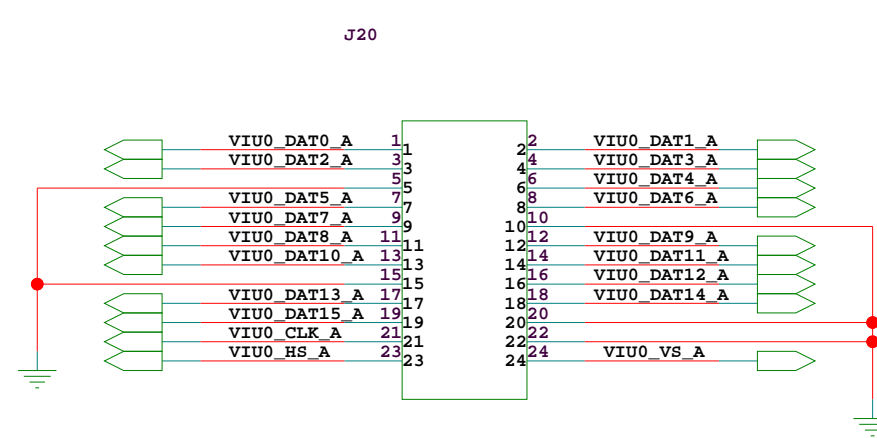
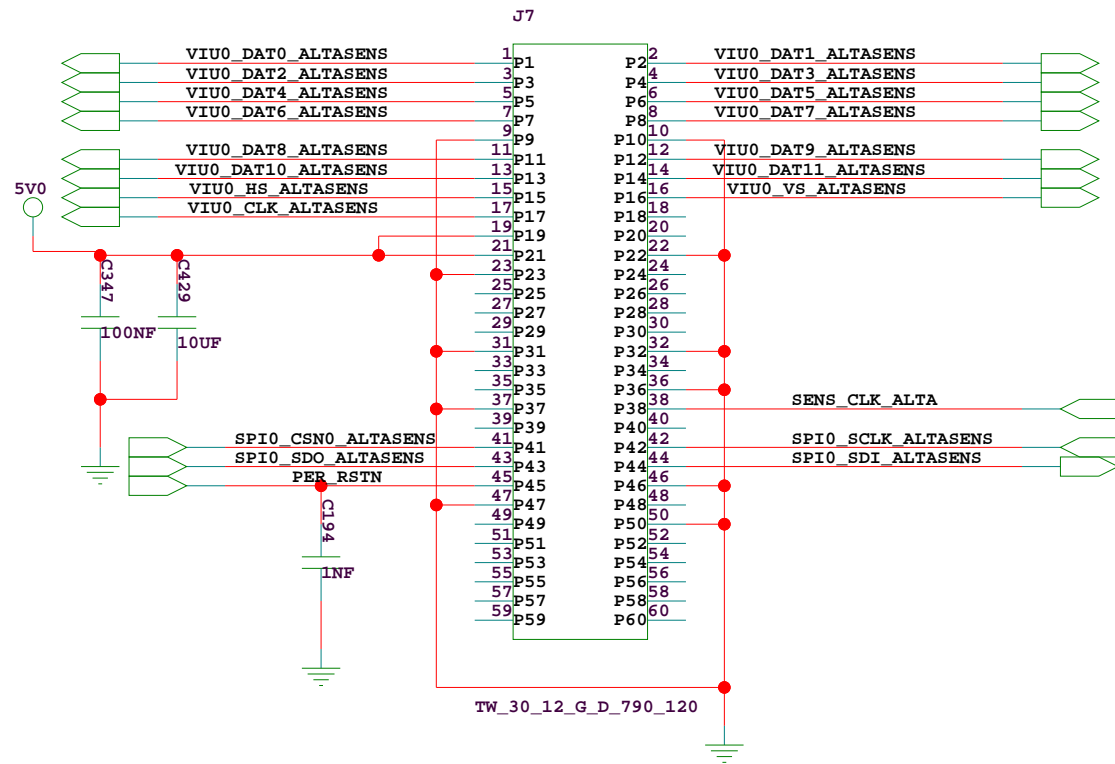
The type and specification of the components refer to the BOM

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		B	03030001	HUAWEI TECH CO.,LTD.	

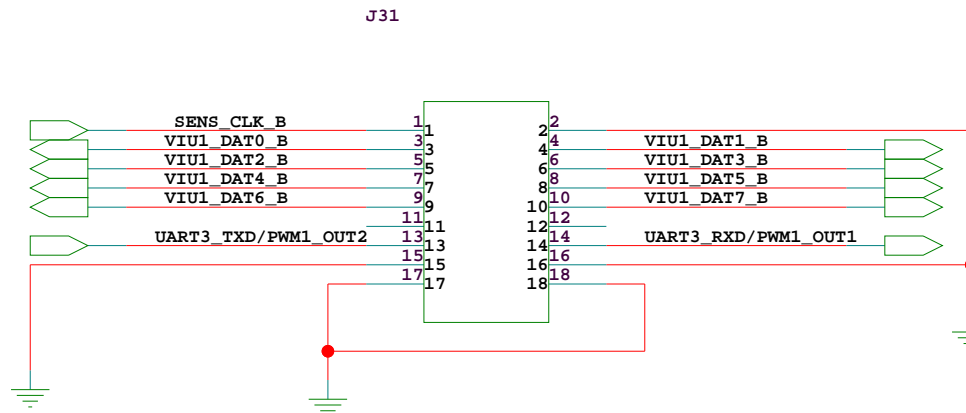
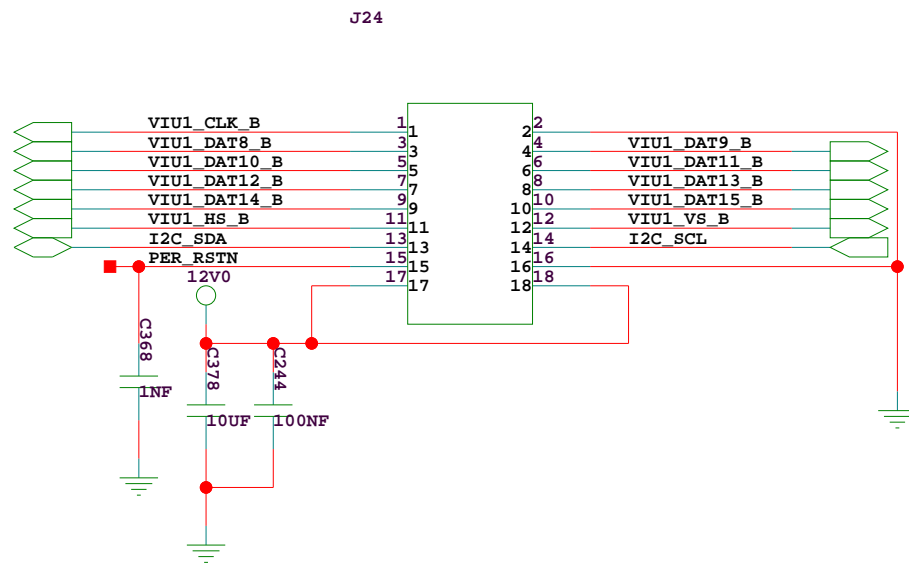
Connector

A Altasens & Passonic Sensor Connector

A Standard Connector



B Standard Connector

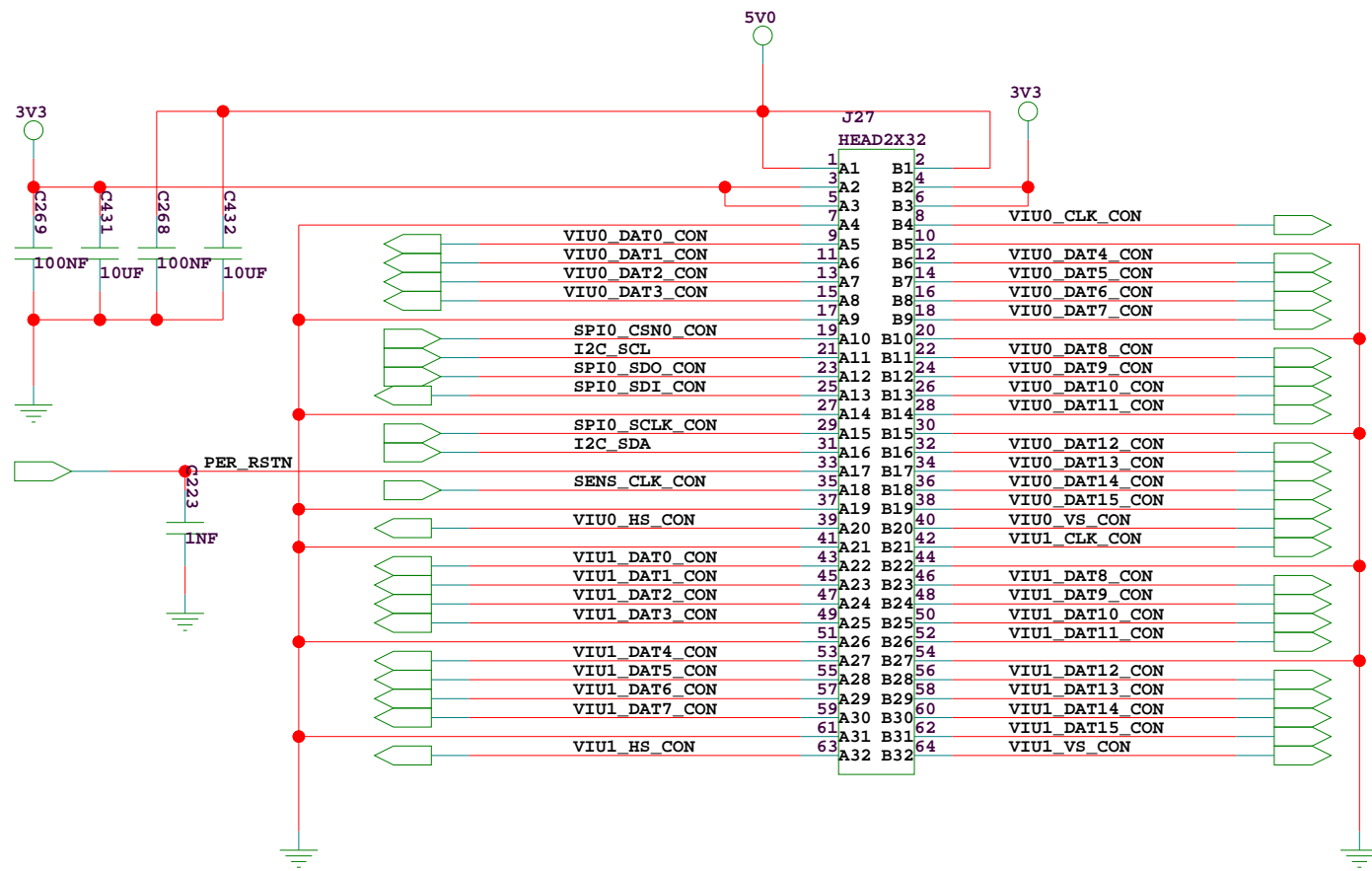


The type and specification of the components refer to the BOM

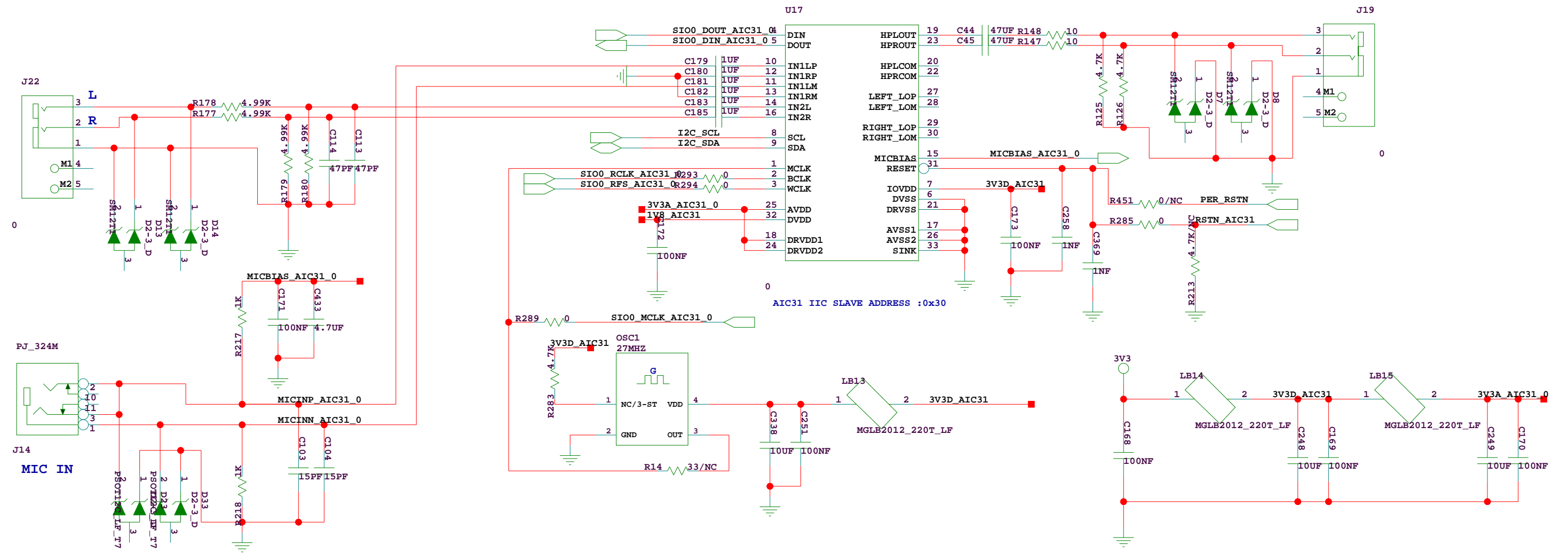
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REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 18 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	

Connector

Peripheral Board Connector



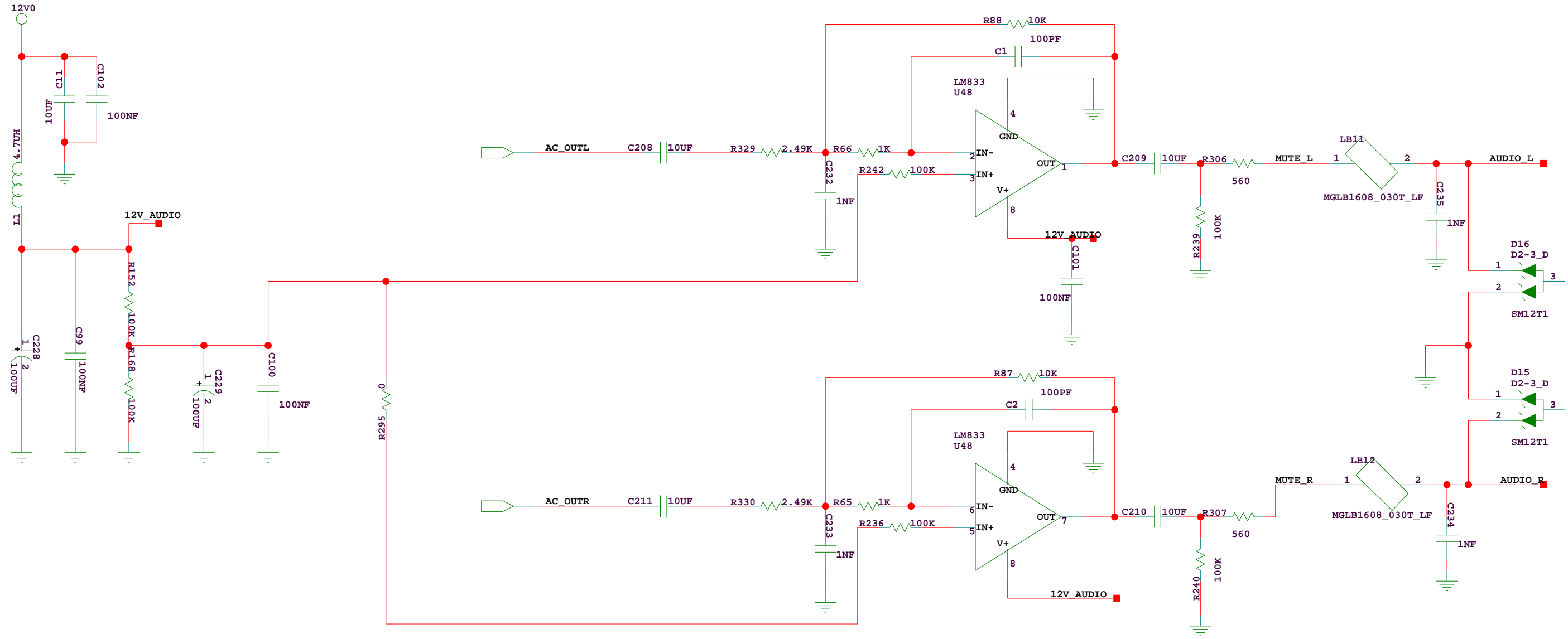
AIC31



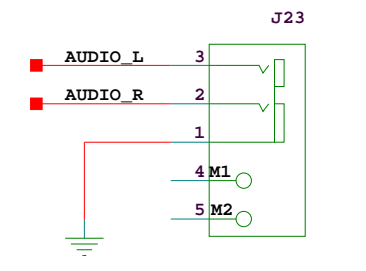
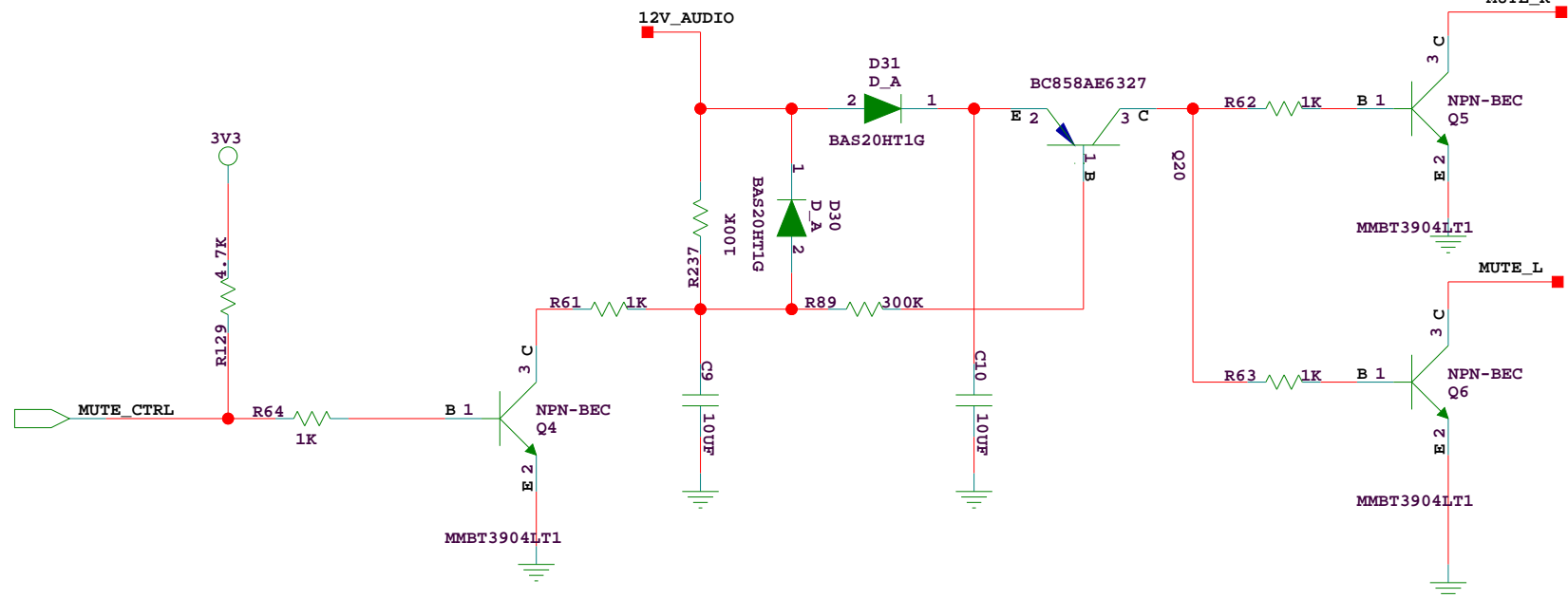
The type and specification of the components refer to the BOM

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REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 20 OF 30
		B	03030001	HUAWEI TECH CO.,LTD.

Audio Codec Output



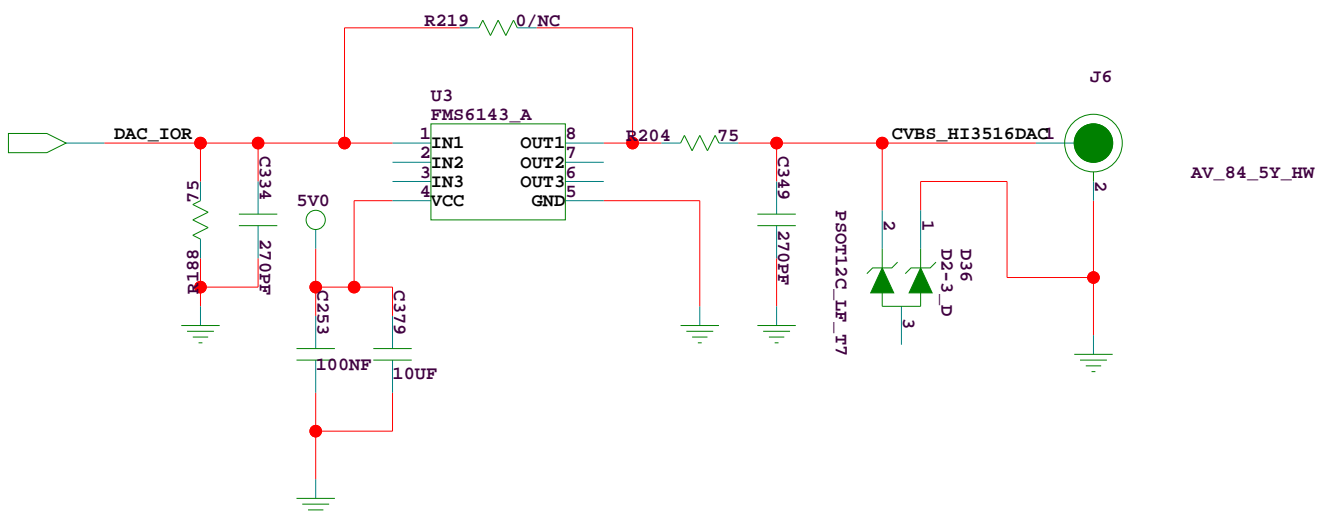
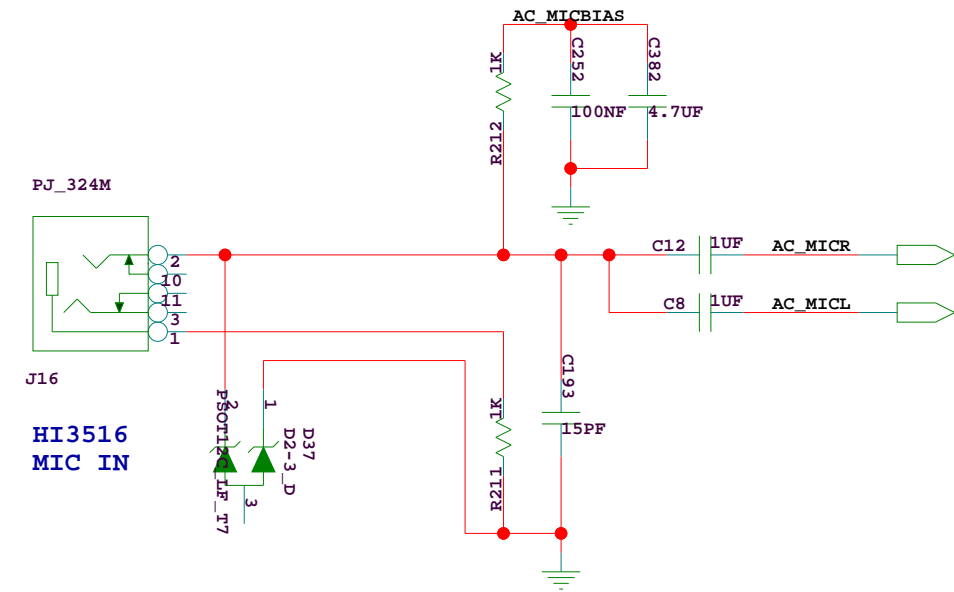
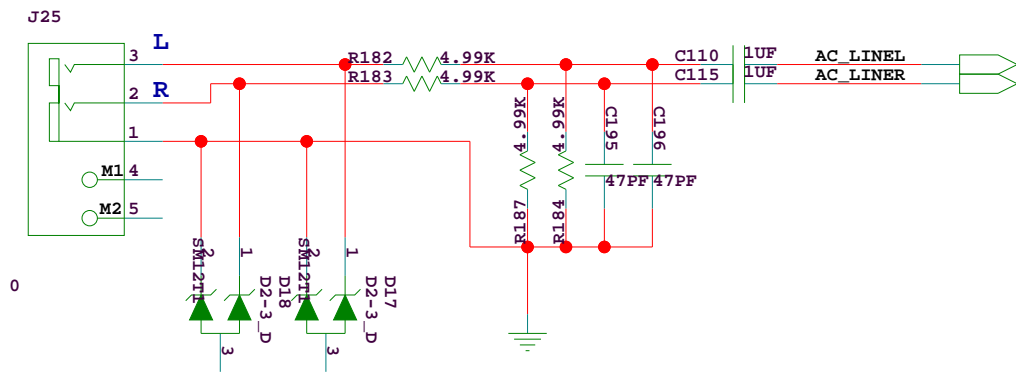
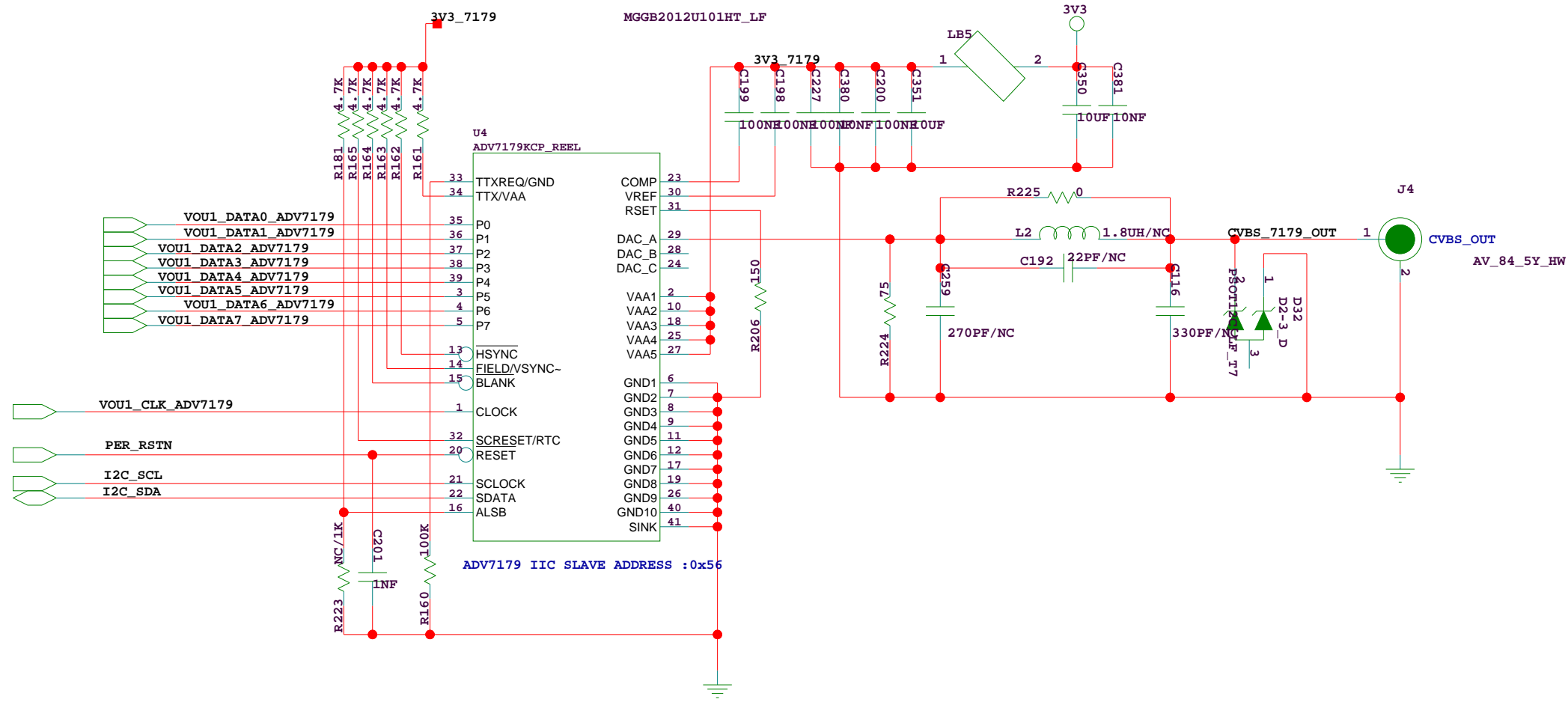
POWER ON/OFF AUDIO MUTE



The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	HI3516DMEB	00001234
REVIEWED	LISI XXXXX	VER	SHEET 21 OF 30
		B	HUAWEI TECH CO.,LTD.
		PART_NUMBER	03030001
		DATE	NA
		ECA NO	00001234

Video BT.656, Audio codec input and DAC output

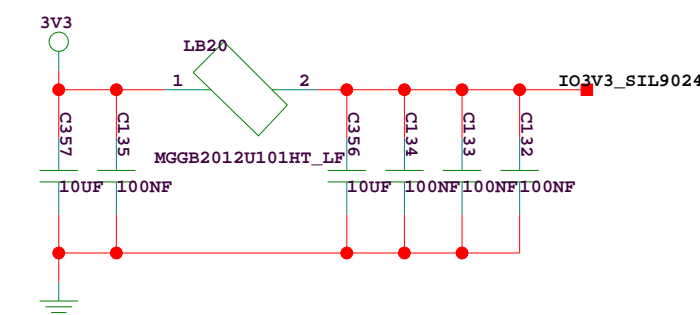
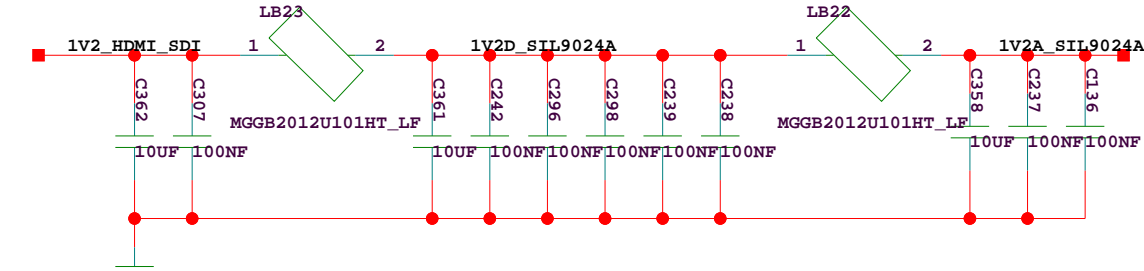
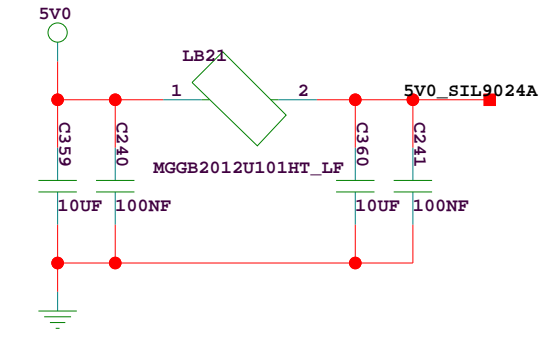
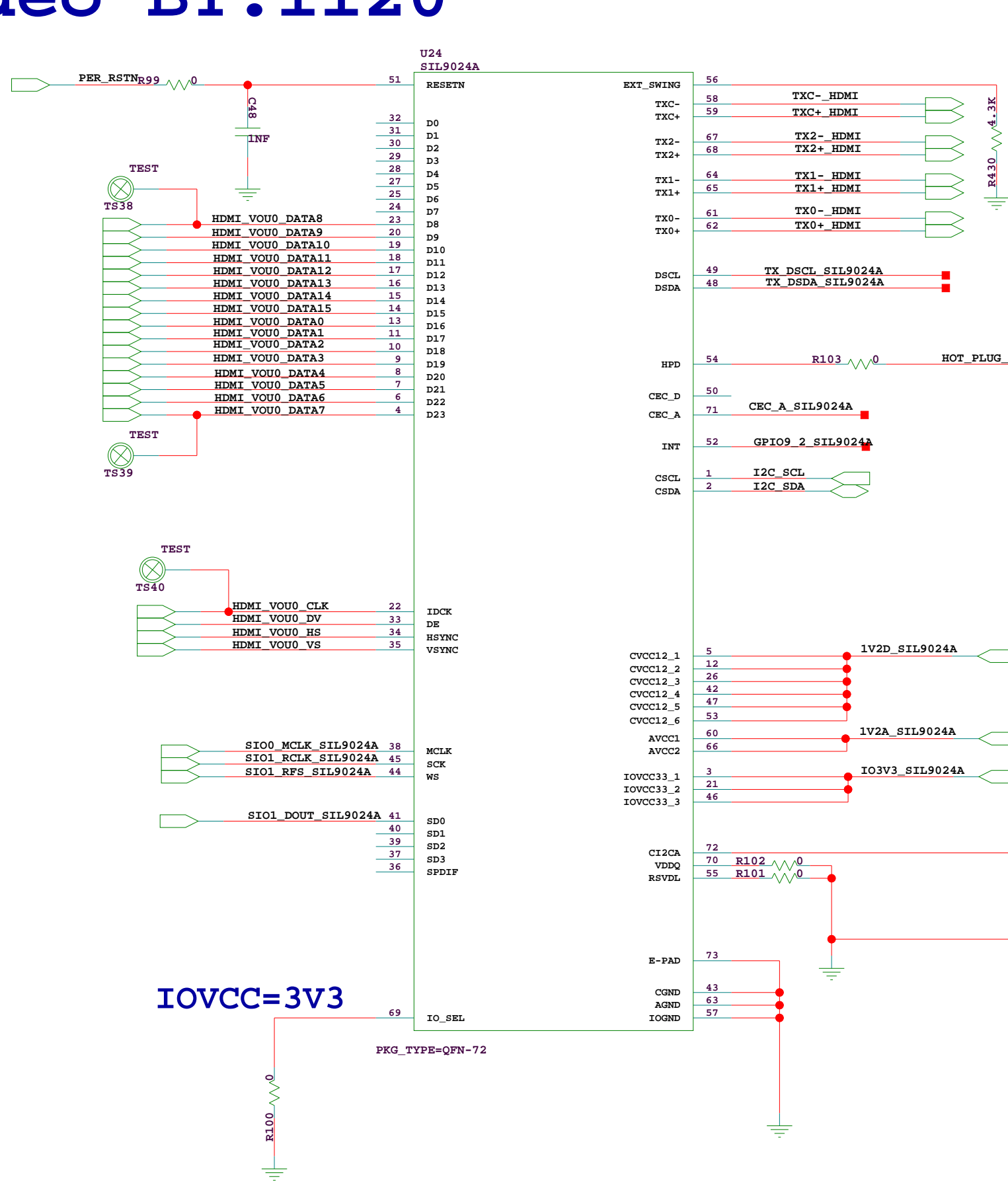


The type and specification of the components refer to the BOM

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REVIEWED	LISI XXXXX			
		VER	PART_NUMBER	SHEET 22 OF 30
		B	03030001	HUAWEI TECH CO.,LTD.

Video BT.1120

HDMI

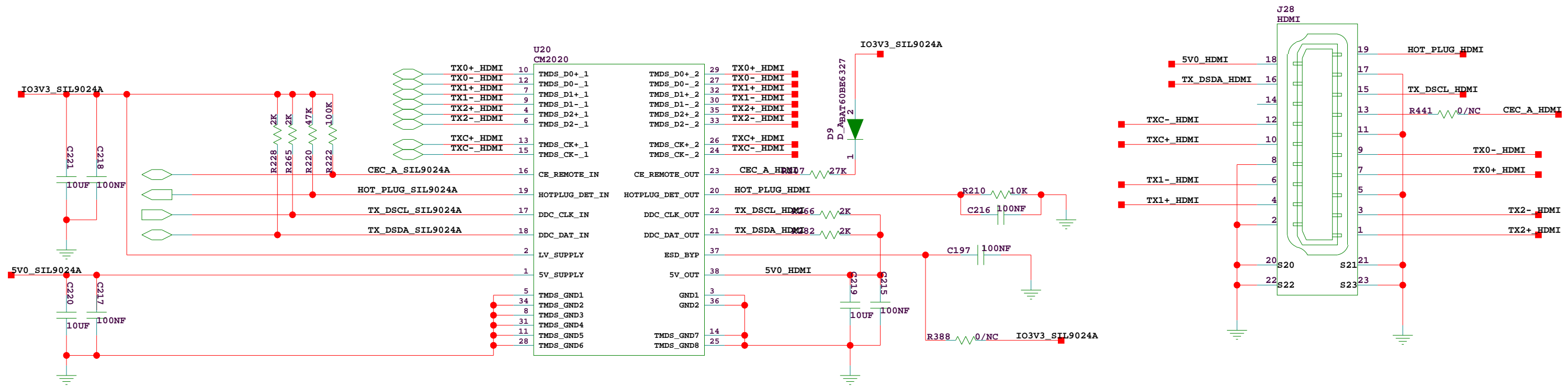


Internal Function	CI2CA = Low
Transmitter Programming Interface(TPI) device address	0x72
CEC Programming Interface(CPI) device address	0xC0
SIL9024 compatible internal registers: first device address	0x72
SIL9024 compatible internal registers: second device address	0x7A

The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	HI3516DMEB	NA
REVIEWED	LISI XXXXX		ECA NO
			00001234
		VER	PART_NUMBER
		B	03030001
			SHEET 23 OF 30
			HUAWEI TECH CO.,LTD.

HDMI ESD

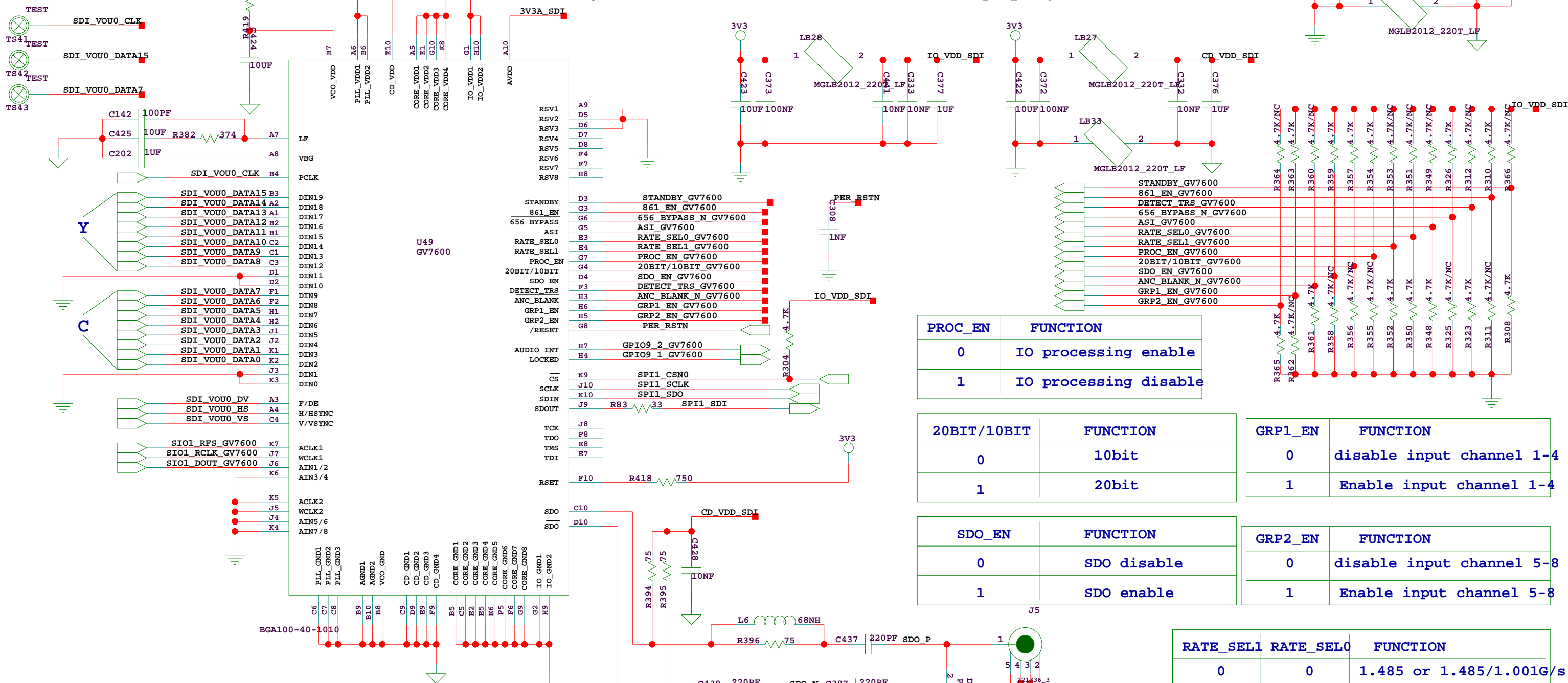


The type and specification of the components refer to the BOM

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DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX				
		VER	PART_NUMBER	SHEET 24 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	

Video BT.1120

SDI



PROC_EN	FUNCTION
0	IO processing enable
1	IO processing disable

20BIT/10BIT	FUNCTION
0	10bit
1	20bit

SDO_EN	FUNCTION
0	SDO disable
1	SDO enable

GRP1_EN	FUNCTION
0	disable input channel 1-4
1	Enable input channel 1-4

GRP2_EN	FUNCTION
0	disable input channel 5-8
1	Enable input channel 5-8

RATE_SEL1	RATE_SEL0	FUNCTION
0	0	1.485 or 1.485/1.001G/s
1	0	2.97 or 2.97/1.001G/s
X	1	270Mb/s

DETECT_TRS	861_EN	FUNCTION
0	0	H:F:V timing
0	1	HSYNC, VSYNC, DE timing
1	x	embedded

656_BYPASS	ASI	FUNCTION
1	0	VIDEO MODE
0	0	DATA THROUGH MODE
0	1	ASI MODE

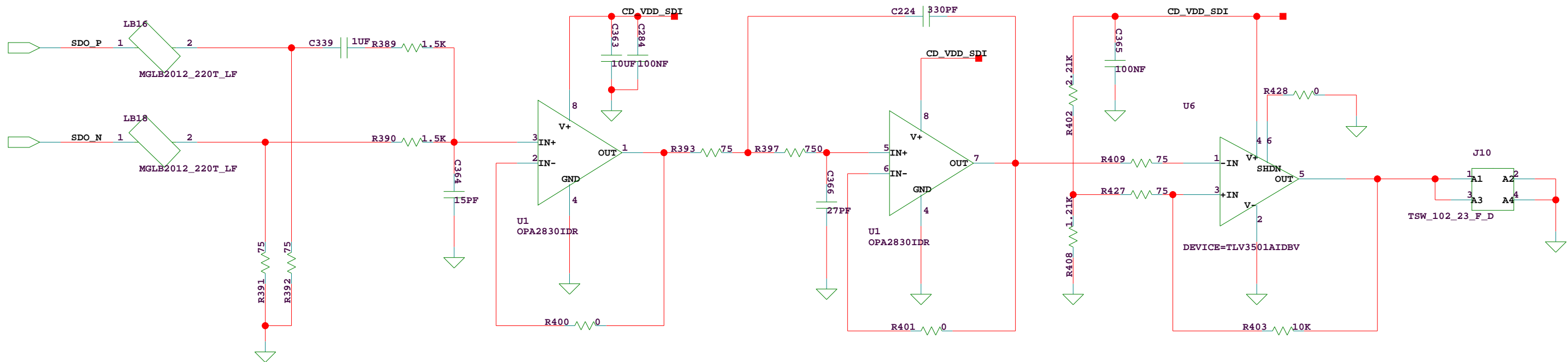
ANC_BLANK	FUNCTION
0	set appropriate blank levels during H and V intervals
1	Luma and Chroma data pass through the device unaltered

The type and specification of the components refer to the BOM

DESIGNED	ZHANGSAN XXXXX	HI3516DMEB	NA
REVIEWED	LISI XXXXX		ECA NO
		VER	DATE
		B	00001234
		PART_NUMBER	SHEET 25 OF 30
		03030001	HUAWEI TECH CO.,LTD.

SDI

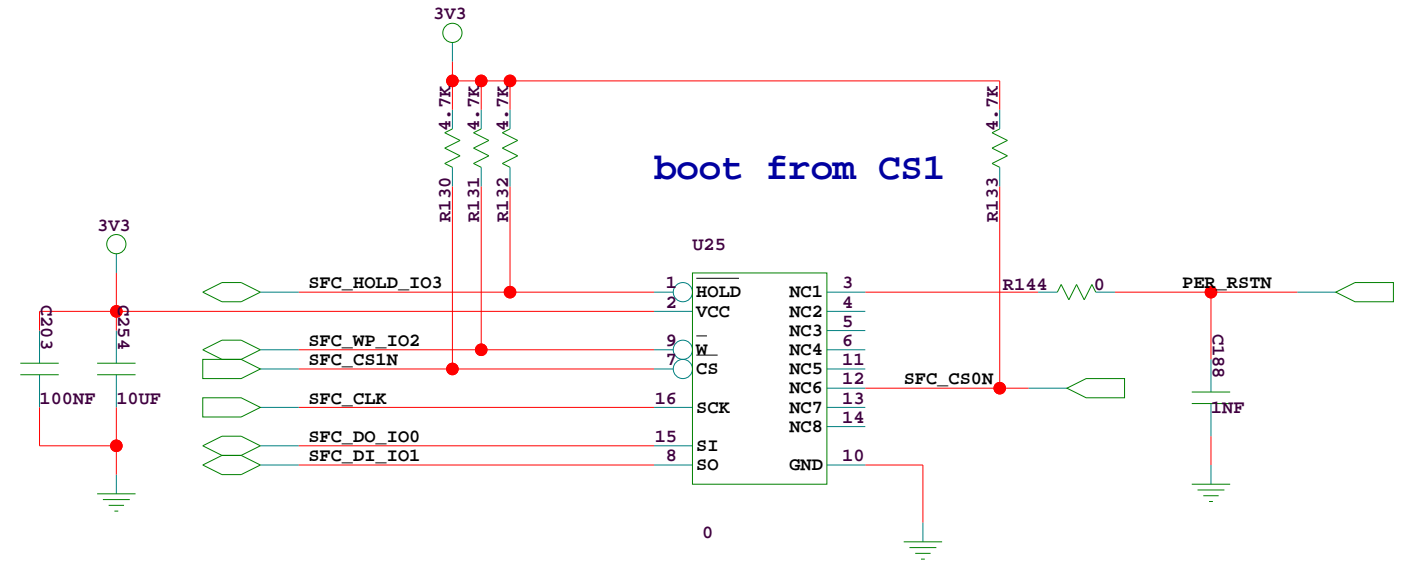
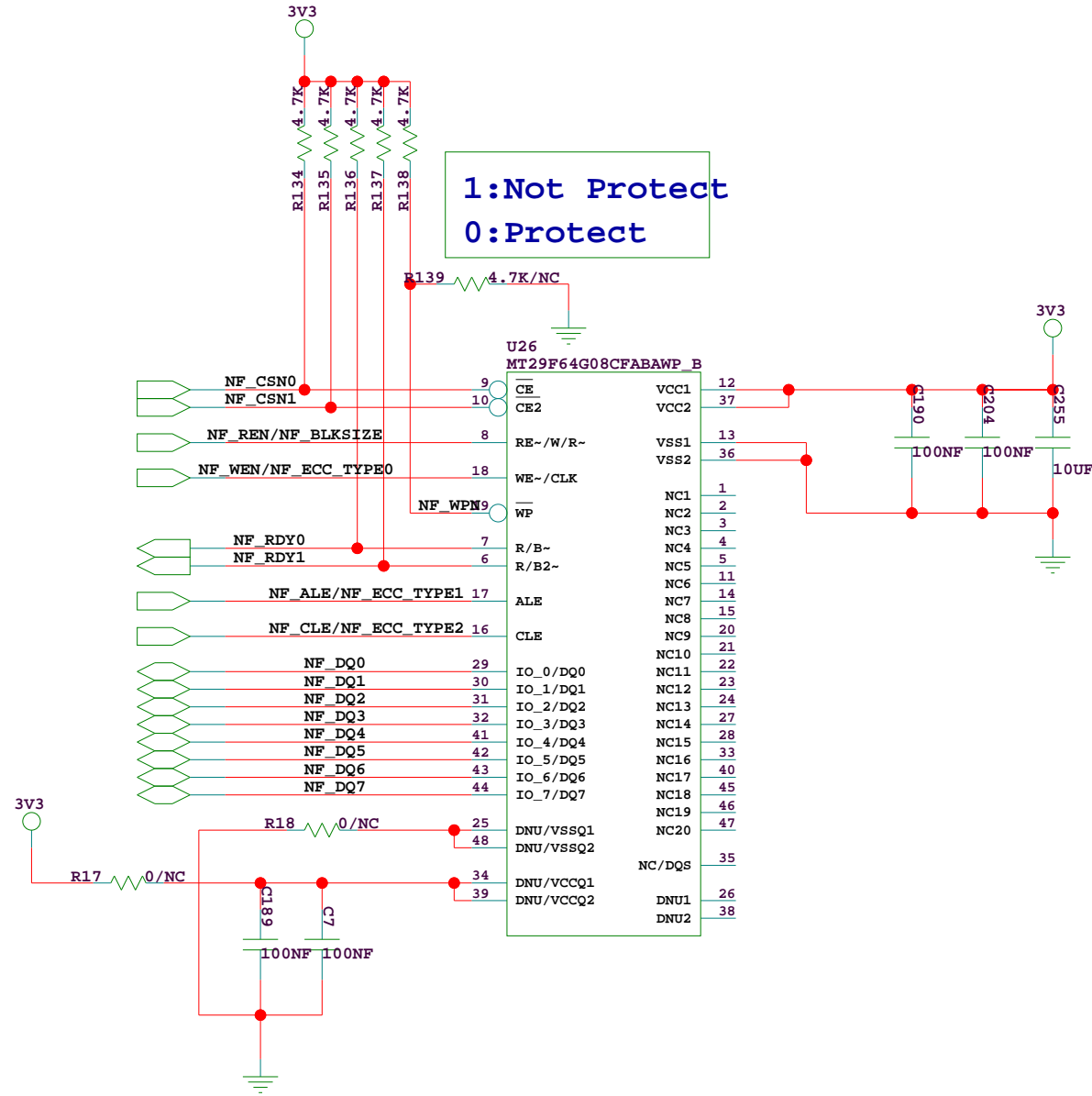
Upstream communication



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 26 OF 30	
		B	03030001	HUAWEI TECH CO.,LTD.	

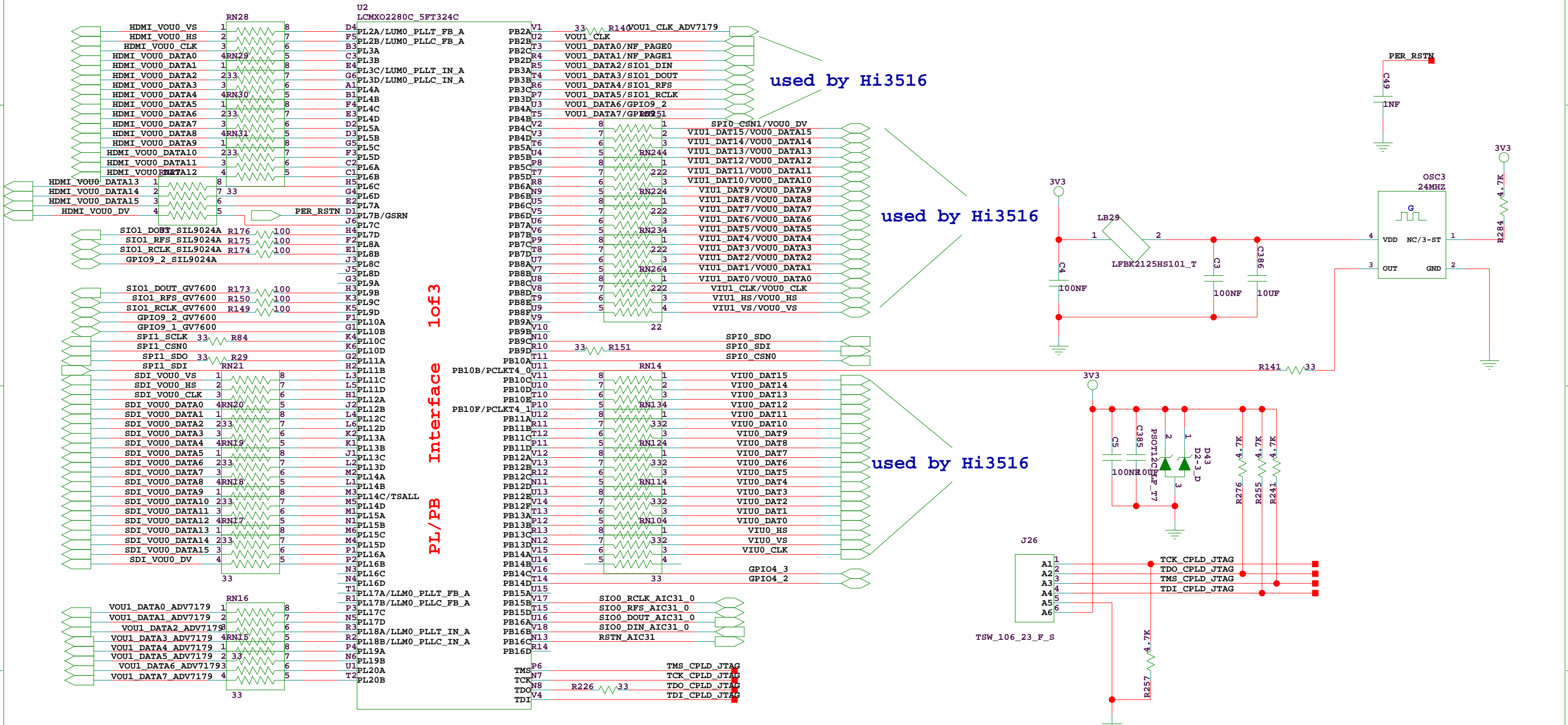
Nand Flash & SPI Nor Flash



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 27 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	

CPLD



used by Hi3516

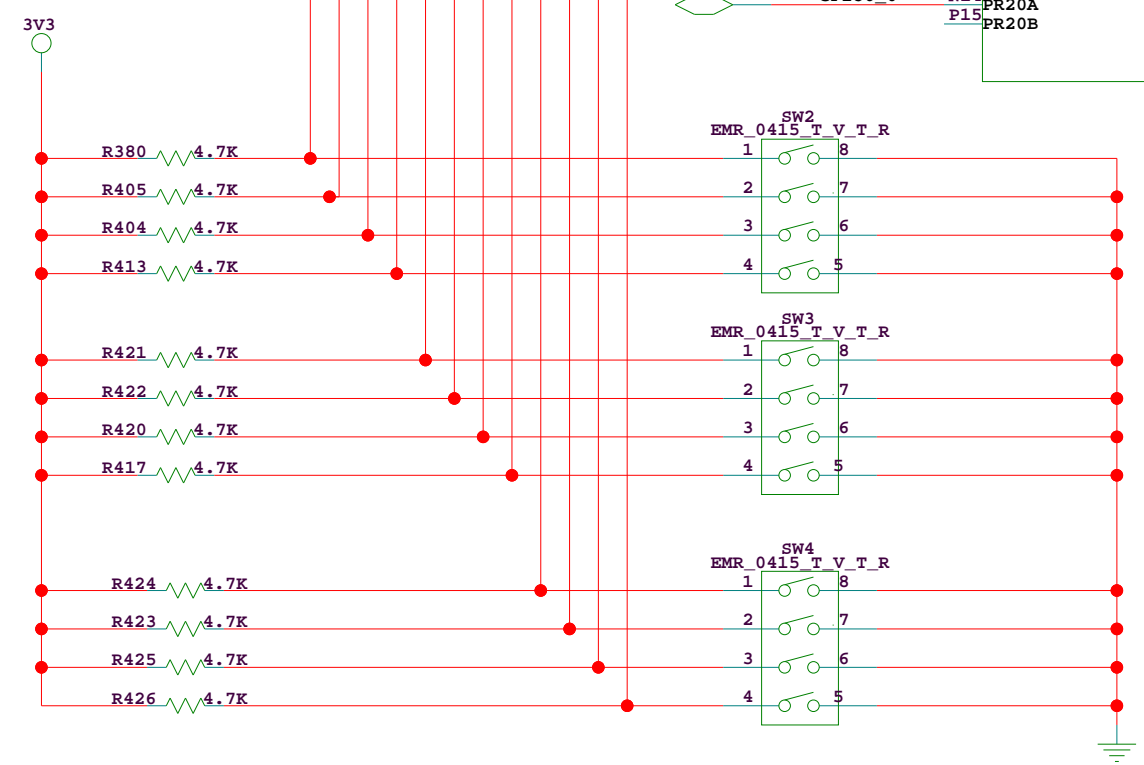
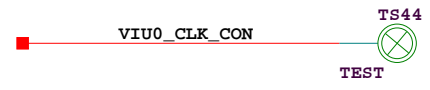
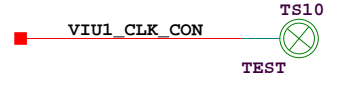
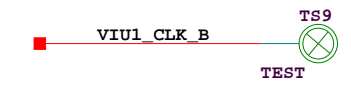
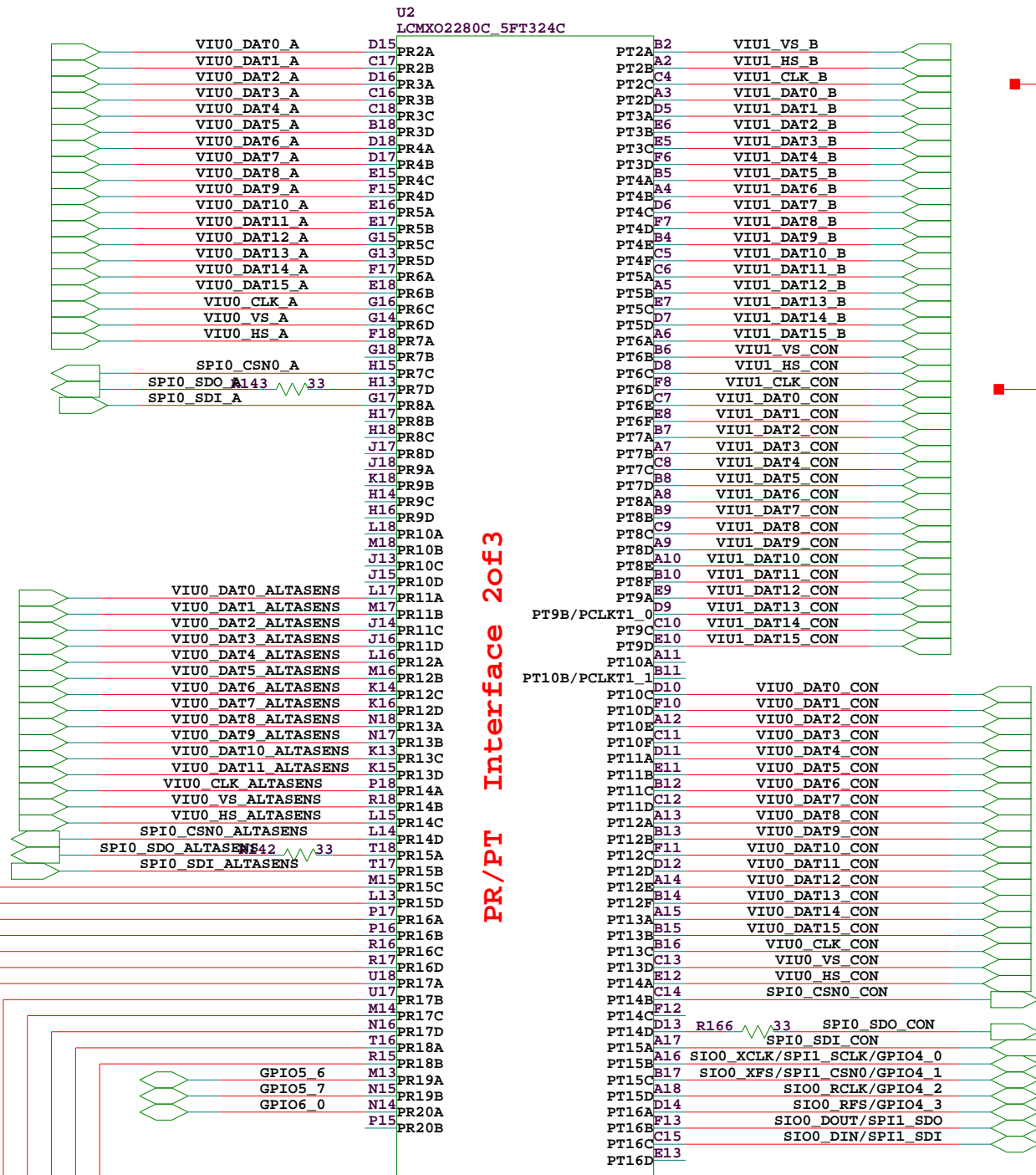
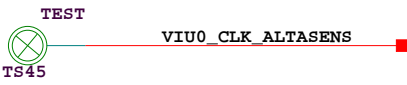
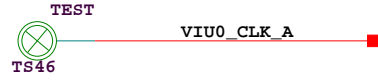
used by Hi3516

used by Hi3516

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 28 OF 30	
		B	03030001	HUAWEI TECH CO.,LTD.	

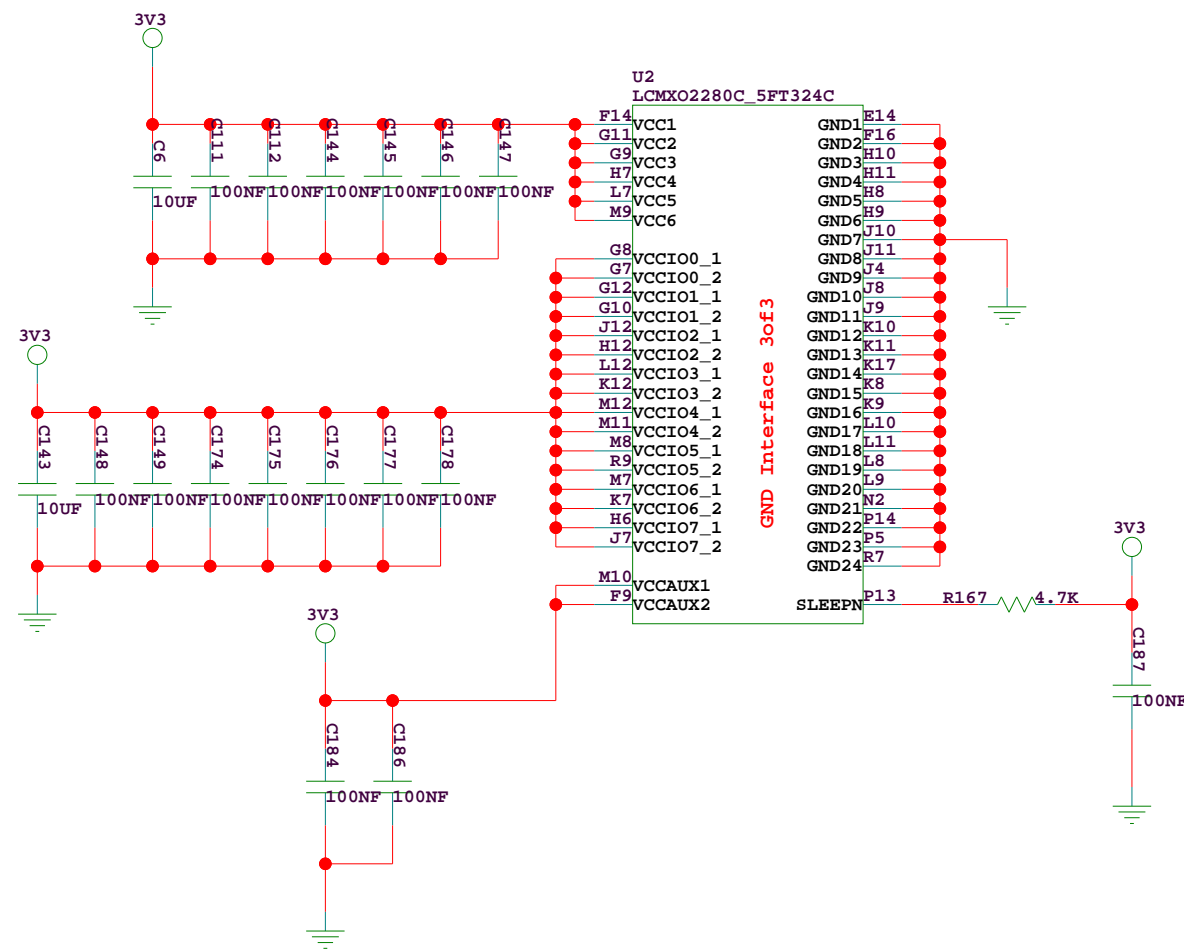
CPLD



The type and specification of the components refer to the BOM

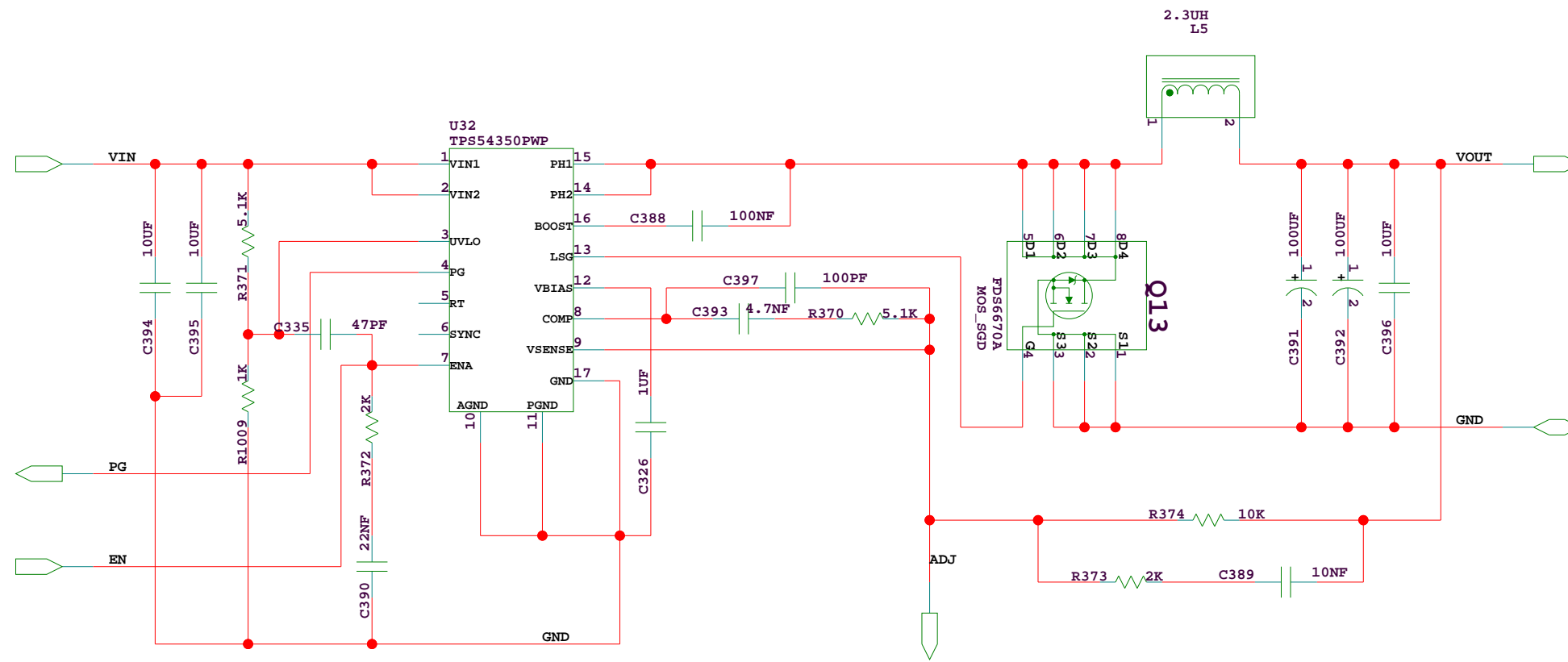
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DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 29 OF 30
		B	03030001	HUAWEI TECH CO.,LTD.

CPLD POWER



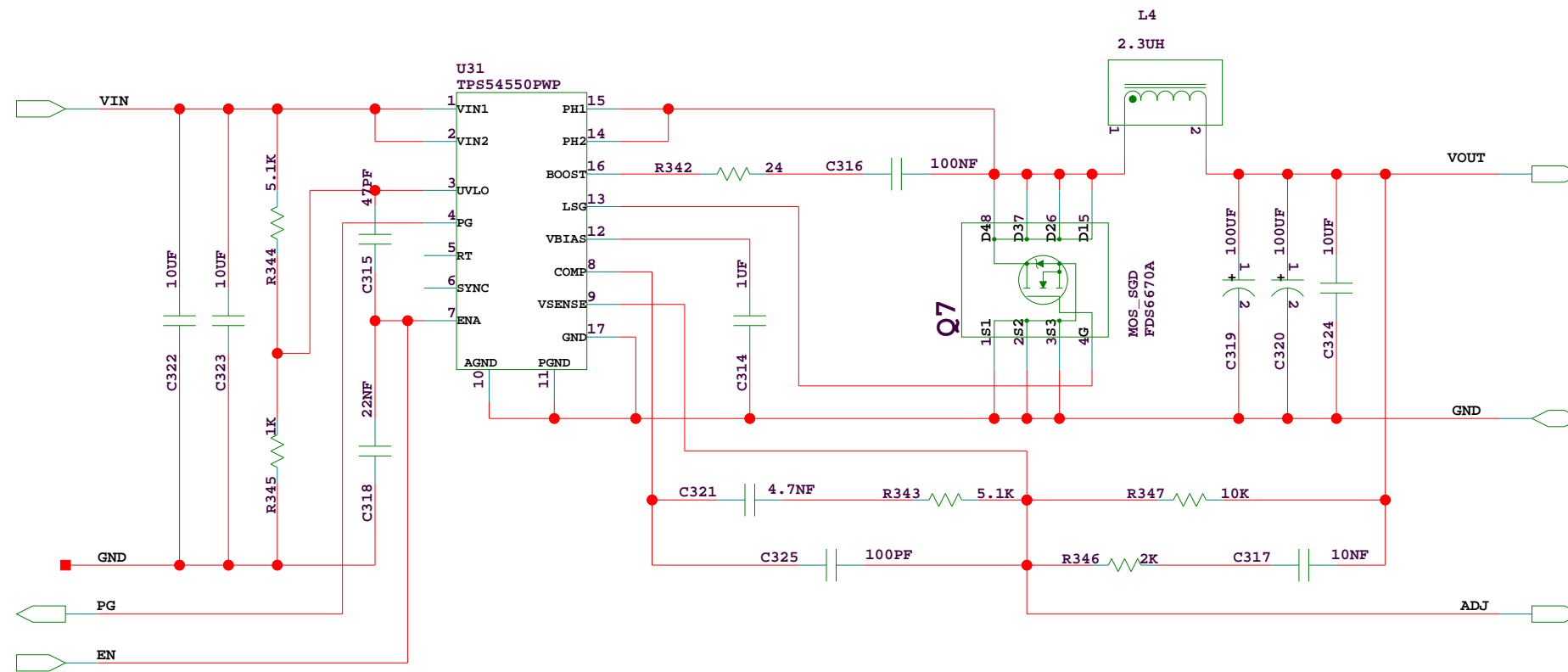
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGSAN XXXXX	HI3516DMEB		00001234	
REVIEWED	LISI XXXXX	VER	PART_NUMBER	SHEET 30 OF 30	
		B	03030001	HUAWAI TECH CO.,LTD.	



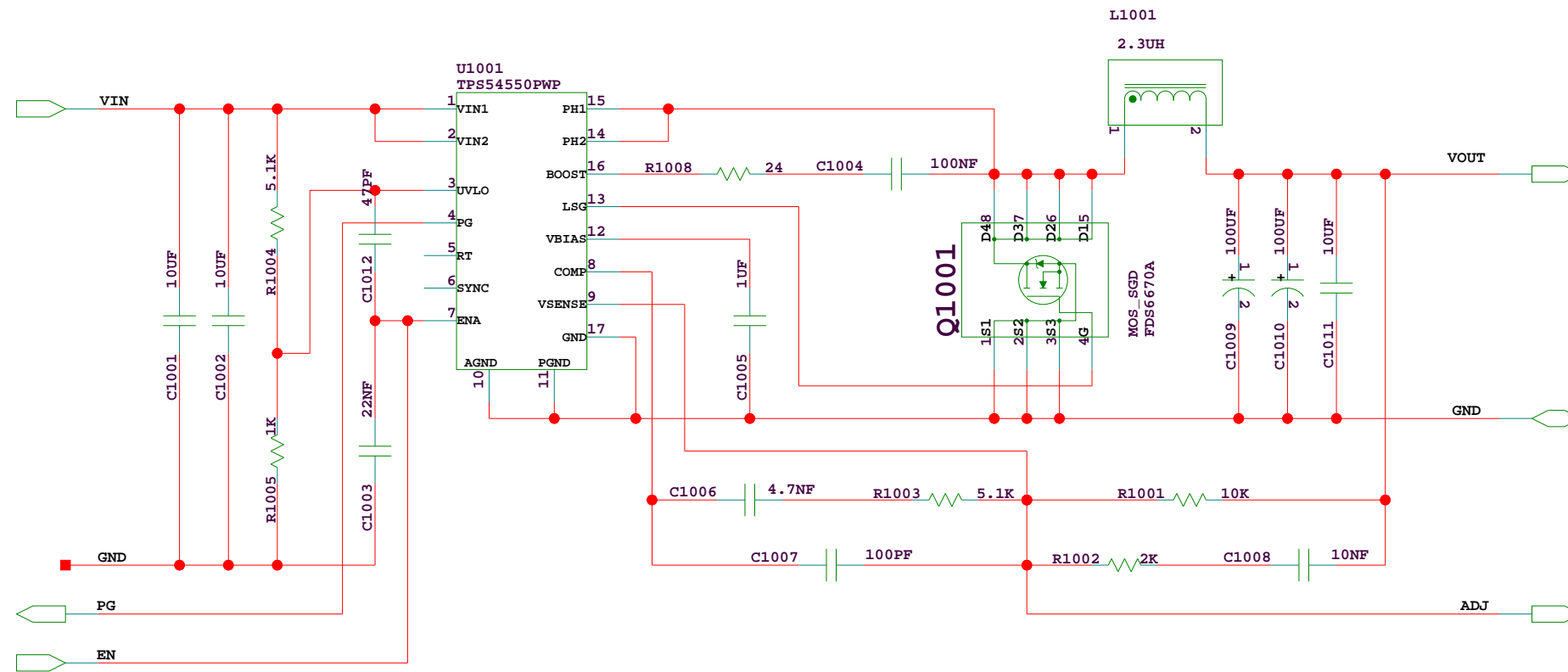
The type and specification of the components refer to the BOM

				NA	2006-10-28
				ECA NO	DATE
DESIGNED	LINSONGZHI 60019739	TPS5435012S3V3		00001234	
REVIEWED	DINGJIE 26211				
		VER	PART_NUMBER	SHEET 01 OF 1	
		A	03030001	HUAWEI TECH CO.,LTD.	



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	LINSONGZHI 60019739			00001234	
REVIEWED	DINGJIE 26211			00001234	
		VER	PART_NUMBER	SHEET 1 OF 1	
		A	03030001	HUAWEI TECH CO.,LTD.	



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	LINSONGZHI 60019739			00001234	
REVIEWED	DINGJIE 26211			00001234	
		VER	PART_NUMBER	SHEET 1 OF 1	
		A	03030001	HUAWEI TECH CO.,LTD.	